THE MANKIND QUARTERLY

VOLUME XXXIX No. 1 Fall 1998

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Apollo the Wolf-god

Daniel E. Gershenson

CONTENTS

APOLLO AND THE WOLF
EVIDENCE FOR THE WIND-WOLF
THE WOLF-NAME IN TOPONYMY
HEROES OF GREEK MYTH WHO BEAR THE WOLF-NAME OR PARTAKE IN ITS WIDER CONTEXT
THE DOLPHIN AND THE WOLF
THE WOLF AND DEATH
WEREWOLF-CONFRATERNITIES AND WIND EVIDENCE
EPILOGUE
THE STOIC EXPLANATION OF THE EPITHET *LYKEIOS*
THE TRIAL OF OLD THIES, 1691
LYKOS AND *LYKEIOS*: NOTES TOWARD A THEORY OF THE FORMS OF ANCIENT INDO-EUROPEAN RELIGIOSITY
INDEXES

JOURNAL OF INDO-EUROPEAN STUDIES
Monograph Number 8
ISBN 941694-38-0 – Paperback, 156 pages

Price: $30.00 plus $2.00 postage
VISA AND MASTERCARD ORDERS ACCEPTED
Special Price $15 plus $2.00 postage for MQ Private Subscribers

Institute for the Study of Man
1133 13th St., N.W., Suite C-2
Washington D.C., 20005
Tel: (202) 371-2700 Fax: (202) 371-1523

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Vol. XXXIX, No. 1 Fall 1998

THE MANKIND QUARTERLY

EDITORIAL COMMITTEE

PETER BOEV (Sofia, Bulgaria)
BRUNETTO CHIARELLI (Florence, Italy)
HANS W. JÜRGENS (Kiel, Germany)
RICHARD LYNN (Coleraine, Northern Ireland)
EDGAR C. POLOMÉ (Austin, Texas)
GLAYDE WHITNEY (Tallahassee, Florida)

EDITORIAL ADVISORY BOARD

Tadeusz Dzierżykray-Rogalski, Warsaw, Poland; J. Gladykowska-Rzeczycka, Gdansk, Poland; J. Balslev Jorgensen, Copenhagen, Denmark; David de Laubenfels, Syracuse, New York; T.L. Markey, Ann Arbor, Michigan; Umberto Melotti, Milan, Italy; Clyde E. Noble, Athens, Georgia; Jens Palsson, Reykjavik, Iceland; Ralph M. Rowlett, Columbia, Missouri; Frederick J. Streng, Dallas, Texas; Charles C. Susanne, Brussels, Belgium; Daniel R. Vining, Philadelphia, Pennsylvania; Volkmar Weiss, Leipzig, Germany.

FOUNDER AND FORMER EDITOR-IN-CHIEF
The late Robert Gayre of Gayre (Edinburgh, Scotland)

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

VOLUME XXXIX, No. 1 Fall 1998

CONTENTS

A Geometric Perception of Cropland and Village in Eurasia by Using the Words for "Four, Square"
Penglin Wang 3
Cultural Evolution and Gender Roles: Advantage ... Patriarchy
Nancy S. Coney & Wade C. Mackey 45
Devolution by Revolution: Selective Genocide Ensuing from the French and Russian Revolutions
Robert K. Graham† 76
The Case *for* Cloning
J. W. Jamieson 95
The "Flynn Effect": Does it Apply to Academic Achievement?
Ralph Scott, Hanna Bengston, and Ping Gao 109
Book Reviews 119

Cover Picture: Altaic male (*See Article:* A Geometric Perception of Cropland and Village in Eurasia by Using the Words for "Four, Square")

The Mankind Quarterly is a refereed quarterly journal published by Scott-Townsend Publishers, P.O. Box 34070, NW Washington DC 20043, U.S.A. Telephone (202) 371-2700. Fax (202) 371-1523. Manuscripts for publication may be submitted to that address in two copies, laid out according to the Chicago Manual of Style. The price of subscriptions is $27.50 per annum for students, $40.00 per annum for private individuals, and $80.00 per annum for libraries, institutions and other corporate bodies. Special reduced three-year subscription rates are available, at a cost of $97.50 for private individuals (twelve issues) and $220.00 for libraries and other corporate bodies (twelve issues). Foreign postage: add $8.00 per annum for shipment to non-U.S. addresses.
Copyright 1998 ISSN 0025-2344

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

A Geometric Perception of Cropland and Village in Eurasia by Using the Words for 'Four, Square'[1]

Penglin Wang
The Chinese University of Hong Kong

Given the early contact between Indo-European and Altaic in Central Asia, this paper analyzes the cognitive mechanisms of the direct causal relation between the number four and the words for 'cropfield, village, town' in Eurasia. The semantic extensions of the words for 'four' are explained in the following three consecutive arguments. First, the sense of 'four' is taken to denote 'four-sided, square'. Second, the square figures are used to refer to cropfield and some other quadrate plain figures and objects. Third, village, garden, town and city fall among the quadrilateral figures and are so named. In the same language and related languages a semantic extension may be transparent, but it becomes quite opaque cross-linguistically. What is known is that the words for 'square' and 'quarter' derived from the words for 'four'. Under this guidance, Old English *ðorp* 'farm, village' is to be related to Mongolian *dörben* 'four', OE *tūn* 'town' to Manchu *duin* 'four', Tokharian A *kwaṣ-* 'village' to Manchu *hošon* 'quarter, square', and Persian *čahār* 'four' to Mongolian *cağarsun* 'paper'.

Key Words: Cognitive anthropology, linguistic anthropology, Indo-European, Altaic, Tokharian, Chinese, Central Asia.

1. Introduction

The cognation of numerals has been in the forefront of historical and comparative studies since the beginning of Indo-European linguistics. The resultant findings have added greatly to our store of knowledge about the nature of similarities among various Indo-European languages. The general opinion is that the reconstructed Proto-Indo-European word **qetwōr-* (or **kwetwor-*, **$k^{ho}et^{h}we/or$-*) 'four' is responsible for deriving all the following Indo-European

[1] This research is supported by a UGC Earmarked Grant (CUHK 175/96H) from the Hong Kong Research Grants Council.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

words for 'four': Sanskrit *catvā́ri*, Avestan *čaθwārō*, Persian *čahār*, Armenian *č'ork'*, Latin *quattuor*, Old Irish *cethir*, Gothic *fidwōr*, Old English *fēower*, Old Saxon *fiuwar*, *fiori*, Lithuanian *keturi*, Latvian *četri*, Old Church Slavic *četyre*, Tokharian A *śtwar*, Tokharian B *śtwer*, *śwer*, and Greek *téttores*, *téssares*. However, whether these reflections have any layers in the process of their development and whether the words for 'four' have wider cultural and cognitive implications in these languages, as well as circulation in adjacent languages of different stocks such as Altaic languages has not been investigated in depth.

Many Altaic linguists have been puzzled by the diversity of numerals in the so-called three branches of Altaic: Turkic, Mongolic, and Tungusic. For instance, the pioneering proponents of the common Altaic theory G. J. Ramstedt and N. Poppe had great difficulty in approaching numerals in their comparative studies. For this reason some scholars objected to the Altaic theory because it did not consider numerals and basic words common to all Altaic languages. The outspoken opponent of the Altaic theory Clauson (1956:182) argues that the basic words including the numerals between Mongolic and Turkic are all entirely different. He maintains that to prove language relationship or affinity the numerals have to be related as cognates first of all. However, one numeral represents an exception in this dilemma, and that is the numeral 'four' in various Altaic languages. Even though there are such differences as Turkic *t* and Mongolic *b* in the position following the trill *r*, the similar lexemes, Turkic *tö-r-*, Mongolic *dö-r-*, and Tungusic *du-(i)n* (Manchu) in forming a cognate morpheme for 'four' are recognized and underlined by the proponents of the common Altaic theory. Ramstedt (1981:63) holds that only the numeral 'four' probably had a common origin, and Old Turkic *tört* 'four', Written Mongolian *dörben* 'four', and Manchu *duin* 'four' were developed from a common root **do*. Posch (1958:274) also compared these numerals by reconstructing a common Altaic root **dö*. Poppe (1960:110) also made some comparison of these three numerals, though he (1965:155) later declared that the lack of numerals common to all Altaic languages is not a decisive factor in establishing the Altaic theory.

Historical linguists have dealt with the symbolic value of the number four, but few of their studies have investigated the

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

relationship that exists between the number four and quadrilateral cropfields and villages in which ancient people lived. Gamkrelidze and Ivanov (1995:749) argue: "The symbolism of the number four in archaic Indo-European tradition is more restricted and less significant than that of the number three. The symbolic value of 'four' is visible primarily in the structure of ritual, determining its organization and spatiotemporal properties". We may attain a full understanding of symbolic value and practical use of the number four by touching on geometric square imagination and achievement of the ancient people over Eurasia. In this paper I shall discuss the historical facts recorded in western and Chinese chronicles and analyzed by modern historians, especially such as seem to have been overlooked by previous researchers who were engaged in numeral studies, and build up etymological connections between the words for 'farm, village' and the words for 'four'.

My approach is mainly concerned with the analysis of the cognitive mechanisms of the direct causal relation between the number four and the words for 'cropfield, village, town'. The semantic extensions of the words for 'four' are explained in the following three consecutive arguments. First, the sense of 'four' is taken to denote 'four-sided, square, quadrate' or 'four-point'. Second, the square figures are used to refer to cropfield and some other quadrate plain figures and objects. Third, village, garden, town and city fall among the quadrilateral figures and are so named. In the same language and related languages a semantic extension may be transparent, but it becomes quite opaque cross-linguistically. As a result, specialization without leaving a semantic sign of 'four' takes place in the course of extensions. To bring out the cross-linguistic opaqueness, I will try to follow a basic axiom of science: to seek for the unknown by way of the known. What we know is that the words for 'square' and 'quarter' derived from the words for 'four'. And further the words for 'square' and 'quarter' may well denote a place and region. So, today such names as Tiananmen Square and Times Square are well-known to us. Under this guidance, for example, OE[2]

[2] The following abbreviations are used below: Chi: Chinese, EYu: Eastern Yugur, Lat: Latin, Ma: Manchu, ME: Middle English, OE: Old English, OHG: Old High German, OT: Old Turkic, Uig: Uigur, Per:

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

ðorp 'farm, village' is to be related to WMo *dörben* 'four, *square', and OE *tūn* 'town' to Manchu *duin* 'four'. In the same way, Tokharian A *kwaṣ-* 'village' comes to be connected with Manchu *hošon* 'quarter, square', and Persian *čahār* 'four' with WMo *cağarsun* 'paper'.

2. Evidence for Semantic Extensions of the Words for 'Four'

The best pieces of evidence for etymological connections of the words for 'four' with those for 'four-sided plane figure', 'region, district', 'place', and 'area' are from Indo-European languages such as Latin and English. The two English words *square* and *quarter* illustrate this point. The English word *square* (ultimately from Latin *ex+quadra* 'square' < base of *quattuor* 'four') denotes 'an object having the shape of four sides', 'four-sided open space in a town', 'rectangular area', and 'buildings and streets surrounding a square'. The English word *quarter* is originated from Latin *quartārius* 'fourth part of a measure' formed on *quartus* 'fourth', ordinal of *quattuor* 'four') through Old French *quartier* and comes to have, among other meanings, 'any of the regions of the earth thought of as under these divisions', 'direction; district', 'a particular district or section in a city [the Latin *quarter*]', '[pl.] lodgings; place of abode', and 'a particular person, group, place'. This kind of psychological association of a numeral with plane figures is not limited to words for 'four'. The English language is especially rich and resourceful with this association. The word *triad* (Greek *trias*, gen. *triados* < *treis* 'three') means 'a group of three persons, things, ideas, etc.' and 'a musical chord of three tones'. The Pentagon (Greek *penta-* 'five') refers to 'a five sided building, in which the main offices of the U.S. Department of Defense are located (hence, the U.S. military establishment)'. And the word *octopod* (Greek *octōpous* 'eight-footed') means 'any animal with eight limbs' and *octopus* 'anything referring to the number eight'.

In Altaic languages, the word for 'four, square' is also resourceful in serving as village (or district) names and ethnonyms as well as in expressing various meanings intrinsically related to square figures. In the book *The Secret History of the Mongols*, written in

---

Persian, PIE: Proto-Indo-European, ToA: Tokharian A, ToB: Tokharian B, WMo: Written Mongolian, WYu: Western Yugur.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

the thirteenth century, WMo *dörben* 'four' serves as a family name (*Dörben oboqtan* 'the Dörben family') and as tribal names (*Dörben irgen* 'the Dörben people', *Dörben Tatar* 'the Dörben Tatar tribe', and *Dörben Tayici'ut* 'the Dörben Tayici'ut tribe'). WMo *dörbed* (alternatively *durbet*, the plural of *dörben* 'four') is used to denote 'one of the four Oirat tribes; one of the banners of the Ulan Tsab League; the name for a Mongolian autonomous county in Heilongjiang Province'. There are many more villages or places named after the word *dörben* in the Mongolian area. In Dagur communities the word *durb* and *durbën*[3] 'four' is recurrently used for village names. For instance, the present author was born in a Dagur village in the Dagur Autonomous Banner of Inner Mongolia. The village is called *Dë:r durbën* 'the upper *Durbën*' in Dagur, distinguished from its neighboring village *Duar durbën* 'the lower *Durbën*'. The two villages obviously took on their names from the Dagur word *durbën* 'four' prefixed by the words for 'upper' or 'lower'. In addition, Dagur *durbë* and Manchu *durbe* both mean 'dog with two spots on its forehead (a dog with two yellow spots above the eyes, giving it the appearance of having four eyes[4])', and Dagur *dërb* 'pillow' has a connection with Dagur *durb* 'four' by virtue of the fact that the Dagur old-fashioned pillows are of rectangular shape. In Turkic, WYu *diorșt* serves as a place name coined after the word *diort* 'four', and Salar has the following village names: *dovey*, *dovë*, *dovu*, which are probably a corrupted form of WMo *dörben* 'four'. That is, the trill *r* dropped just as *r* is absent in Salar *diot* 'four' when compared with OT *tört* 'four', and the bilabial stop *b* weakened to the labiodental fricative *v*.

---

[3] The Dagur word for 'four' has two variants in pronunciation and usage. *durb* is used when standing alone, and *durbën* is used when it serves as names and when it is in an attributive position. For example, in answering the question *këdën ku irsën* 'how many people came', one may say either *durb* 'four' and *durbën ku* 'four people'.

[4] The Dagurs honored dogs of this description. This custom was probably influenced by an ancient Persian praxis. The Vendīdād tells a myth, according to which the death-fiend was driven away by the yellow dog with four eyes, or the white dog with yellow ears (see The Sacred Books of the East, p. 97). Also, Ahura Mazda often indicated a place by using the phrase 'on each of the *four* sides' (see p.70-1, italics is mine).

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

The Mongolian suffix *-ljin* is used to form nouns designating geometric figures (see Poppe 1954:43): for example, WMo *ğurban* 'three', *ğurbaljin* 'triangle', *dörben* 'four', *dörbeljin* 'square', Dagur *ort* 'long', *ortoljin* 'rectangle'. The Eastern Yugur suffixation of *-ljën* to the word *tarā* 'crop' in the resultant form of *tarāljën* 'cropfield' reflects the way in which people conceive a field geometrically. Thus, WMo *dörbeljin* as a noun has the following meanings: square, rectangle; cube; square block; dice; diamonds (in cards); square felt cushion, square basket; square, rectangular, cubic. Its Monguor cognate *dēreljin* denotes 'square, square wooden plate'. Significantly, WMo *dörbeljin* is used in naming towns and forts. There is a county named *Emin* in the northern part of Xinjiang. This county is alternatively called *Dörbeljin* by the local minority people using the Mongolian word, because the town was originally a square clay walled town (see Niu 1994:147). The Dagurs in that area call the town *Durbëljin* and the Kazaks *Dörbiljin*. In 1927-1930, members of the Hedin Expedition excavated the Juyan (Kü-yen) remains in the Edsen-gol region in western Inner Mongolia and found a great number of Chinese tablets dating back to the Han dynasty (BC 206-AD 220). These remains consist of many square buildings including forts and watch-towers. Several buildings bear the same Mongolian name *durbeljin* 'square' with certain prefixes such as *Arven-tokhoi-durbeljin*, *Bagha durbeljin*, *Ikhe durbeljin*, *Mu-durbeljin*, *Taralingin-durbeljin*, and *Ulan durbeljin*. Two of them share the name *Ulan durbeljin* 'the Red Square'. The first one is a well-preserved square fort, 22 X 23 m, with 7-meter-high walls built of bricks with a layer or reeds inserted after every third course. The second is also a well-preserved square stronghold, 22.5 X 22.5 m, built of stamped clay (see Sommarström 1956:178, 1958:315). Both forts date from the Han (BC 206-AD 220) period. It is worthy of notice that a few of the objects included in the 'historical' material discovered by the Hedin Expedition are from the unknown intermediate period between the end of the Stone Age and the middle of the first millennium BC, when Tokharian, Yuezhi and Xiongnu emerge as representatives of an increasingly specialized nomadic way of life. Some few of the finds are ascribable to the indigenous population residing here before the advent of the Han Chinese about 100 BC (see Sommarström 1956:15). In addition, there are two towns in the adjacent area called in Chinese as *xiao fang cheng* 'the

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

small square town' and *da fang cheng* 'the big square town' respectively (see Xue 1991:85). This onomastics suggests that the Mongols and Chinese are accustomed to using the term 'square' to designate similar kind of buildings.

WMo *dörbeljin* 'square' has slightly different transcriptions. Sommarström (1956) renders it as *durbeljin*. Stein (1928:431, 412, 430) uses *durwuljin* as in *Bahān-durwuljin* and *Ekki-durwuljin*[5] or *dürüljin* as in *Arun-tokhai-dürüljin* and *Ulan-dürüljin*. The word *dörbeljin* is often translated into English as 'fort' or 'enclosure' by Stein and Sommarström. Stein argues that the Mongolian designation *dürüljin* (also pronounced as *durwuljin*) means 'fort' (412). Sommarström (1958:289) interprets *Ikhe-durbeljin* (40 X 44 m) as meaning 'The Big Fort', possibly in contrast to *Bagha-durbeljin* (19 X 20 m), 'The Little Fort', and observes that the fort *Taralingin durbeljin* means the 'Walled Enclosure near the Agricultural Settlement', as there are, in fact, undoubted traces of ancient cultivation, e.g. canals and fields, in the neighborhood of the site (343).

WMo *dörbeljin* entered some Tungusic and Turkic languages. In Tungusic, Manchu *durbejen* means 'square, four-cornered; corner, angle' and is often used in such phrases as *durbejen simelen* 'square pool' and *durbejen simelen mukdehun i wecen i baita be aliha falgari* 'the agency for square pool altar offering ceremony'. In Turkic, WYu *diorverjin* (*derveljin*/ *derverjin*) means 'square, quadrate', 'square plate', and 'small square table', and Tuva *dölböljin* 'square'.

In all these cases (and many similar instances may be found) square figures or objects are always found having etymological connections with the words for 'four'. These semantic distributions are especially important in guiding our analysis of the role of square figures in directing people to name quadrate figures. It is indeed very significant that it is through these semantic attributes that we can explain etymological connections between the words for 'four, square' and the words for 'cropfield', 'village', 'town' and so on.

---

[5] The word *ikhe* or *ekki* must be equivalent to WMo *yeke* 'big' and *bagha* or *bahān* to WMo *bağan* 'little, young, childhood' (from OE *māga* 'son, young'). However, Stein (1928:431) erroneously translates *Ekki-durwuljin* as 'the little fort' and *Bahān durwuljin* as 'the big fort'.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Historically, such connections help to bridge a missing link between Altaic and Indo-European in their intimate linguistic contact in general. But beyond that, these connections also represent widespread cultural and cognitive dimensions that mirror universal tendencies and capabilities in these languages prompting their speakers in the direction of geometric perception and abstraction. To sum up, such etymological connections readily observable to us are by far the most trustworthy evidence we possess as to the semantic transfer of 'four, square' in the direction I have discussed.

3. Chinese Perception of Cropland

We have two much-studied cases of the practice of squaring farmland in early history, one exemplified by the Romans, the other by the Chinese. Being situated in two localities far apart in the Eurasian continent, these two peoples provide representative pictures of Eurasian agricultural achievements. I will discuss them both in turn.

The ancient Chinese along the Yellow River and the Yangtze (Chang) River have been considered the real pioneers of agriculture. It is also probable that they might have welded together ideas, ways and means of farming found in other regions. But Chinese indeed created an effective system of squaring cropfields. The cropfield divisions were a principal land system practiced during the western Zhou dynasty (BC 11th century-BC 771) in the Wei River valley around what is today's Xi'an City in the northwestern part of China. At that time, the dynasty was an advanced country with agricultural production as its mainstream economy. Together with the square system Chinese were the forerunners of row cultivation. Temple (1986:15) argues that growing crops in rows, and taking care to weed them thoroughly, was not practiced in Europe until the eighteenth century; the Chinese were doing this at least by the sixth century BC, and were thus a good 2200 years in advance of the West in one of the most sensible aspects of agriculture.

There has been a problem of how to divide land into pieces for cultivation since the inception of farming in prehistory. In China, the first thing for early cultivators to do was to find land suitable for farming. The next thing was to divide the land into squares or quadrate pieces and then demarcate them. We may ask why people made land into squares. I assume that there were several factors

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

behind this. First, it was simple enough for peasants to keep their cropfields in square figures spontaneously to facilitate farmwork such as plowing, sowing, irrigation and drainage. Second, arable farmland was limited, and quadrilateral cropfields naturally served to use land most economically. In other words, the inspiration behind the square system was to make full use of land, leaving no space wasted. It was simply unthinkable to make land into round or triangular shapes. And third, the ancient social system in the forms of village communal life required that all members of the commune be equally entitled to the same size of field for cultivation. This ancient egalitarianism led to the emergence of neat square fields marked with boundaries something like a chessboard[6]. After the disintegration of the primitive commune system there emerged slave society in ancient China. Under this system, the practice of squaring cropfields still survived, partly because the old tradition continued and partly because the ruling nobles wanted to reach equal shares of cropfields in their attempts to maintain the square system. As the ancient Chinese thinker Mencius (BC 372-BC 289) pointed out, if longitudes and boundaries were not straight, cropfields would not be equally distributed and thus there would be no fair grain yields and revenues. The boundaries functioned to be roads for wheeled transportation and paths for pedestrians. A Chinese treatise of the third century BC, *Master Lu's Spring and Autumn*, also tells us: 'If the crops are grown in rows they will mature rapidly because they will not interfere with each other's growth. The horizontal rows must be well drawn, the vertical rows made with skill, for if the lines are straight the wind will pass gently through' (citing Temple 1986:15). No doubt, growing crops in rows would naturally form square or rectangular fields. These statements show that the square field system existed from ancient times in China.

In this connection, the so-called well-field system (*jingtianzhi* in Chinese pronunciations) in China merits prime attention. The well-field system is a farming system supposed to have existed in the

[6] At the site of Koyumal in the Tarim Basin there are lines of rough stones dividing the enclosed area in the fashion of an irregular chessboard; some narrow lanes, starting from the structures in the center and running either parallel to, or at right angle across, these lines, seem to mark off sections of the ground (Stein 1928:165).

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

early feudal period, according to which arable lands in a fief were divided into units of nine squares of 100 *mu*[7] each, like the Chinese character for 'a well' (*jing*), which is graphically pretty similar to the sign #. The eight outer squares were dealt out to eight peasant families as their private fields, on which they worked and from the produce of which they derived their sole means of support; the eight families tilled together the central square of the well, which was the public field, its yearly yield going to the granary of the feudal lord, the hereditary master of the land. So the well-field system was both a farm and linked to a village.

The graphical representations of the Chinese words for 'four' and 'cropfield' also reflect the Chinese way of conceiving the number four and the cropfield as square figures. The character for number four consists of a perfect square □ peripherally. The character for cropfield is a plus sign + contained in a square □, giving rise to four divided squares. In the tortoise shell inscriptions the latter word appears the sign # placed inside a perfect square □. The number four is a decisive factor in this geometric conception. In the figurative usage, Chinese bestows a preferable sense of stability and width on the number four and its multiple eight as indicated in a number of idioms. For instance, *siping bawen* literally is 'four even eight steady' meaning 'very steady, well organized'; *simian bafang* literally is 'four sides eight directions' meaning 'all directions, all quarters'; and *sitong bada* literally is 'four open eight reach' meaning 'extending in all directions'. This symmetric allocation of the numbers four and eight reflects the way in which the Chinese perceive the earth as having four corners. Thus, the ancient Chinese conception of the universe is that the earth is square and the sky is round. As early as the period of the Warring States (BC 475-BC 221) a Chinese writer declared that the upper and lower four directions represent the universe. In this way, the ancient Chinese people approached the world in terms of four directions: east, west, south, and north, and they also divided the yearly time into four seasons: spring, summer, autumn, and winter. At this point it is worth noting that the ancient square-shaped symbol swastika is the form of a cross with four equal arms, each bent in a right-angle

[7] This is a Chinese unit of area, which is at present equal to 6.667 ares or 0.165 acre.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

extension. And the early cross-shaped Chinese word for 'shaman, magician' is believed to symbolize the four directions.[8]

In architecture, the Chinese exercise the principle of the square. The overwhelming majority of ancient villages and towns, small or big, are in square or rectangular figures and structures, and most rooms are basically square. An ancient Chinese town is simply named *fangcheng* 'square town'. In Henan Province, the Yangshao village remains of the Neolithic Age are characterized by rectangular pits surrounded by walls on four sides built for the purposes of rooms for living. During the Zhou dynasty, under the system of enfeoffment investing the nobility with hereditary and territories, in addition to the capital town, dukes were able to construct towns in their own states giving rise to a batch of sizable towns. *Zhouli* (The Rites of Zhou) stipulates that the imperial capital city be nine *li* (a Chinese unit of length equal to half a kilometer at present) square in size, with three gates in its each side, and nine longitudes and nine latitudes inside the city. The said longitudes and latitudes refer to streets or roads. The plain figures of the town aim to create a square in their original design with surrounding, strikingly quadrangular walls being as straight and even as much as the landscapes allows. So the basic design of towns looked like the figure ▣. If there are any irregular shapes, they in most instances result from subsequent additions (see Qu 1997:20, 22). Indeed, the square design emerged in China very early and lasted all the way to late periods and the present day. In the thirteenth century, when the Mongols took control of the whole of China, the Emperor of Yuan dynasty Qubilai decided to relocate his capital in Beijing by redesigning and rebuilding it. Having referred to the requirements for an imperial city in the Rites of Zhou, architects designed the Great Capital of the Yuan (dynasty) in square, symmetrical crisscrossing network of streets and roads. Accordingly, the town, the imperial residence, and

[8] In the autumn of 1980, archaeologists working on the remains of the western Zhou palace complex at Fufeng in Shaanxi Province, a bit over sixty miles west of Xi'an and within the general area of Zhouyuan (the birthplace of the Zhou dynasty), discovered two small Caucasoid heads carved from mollusk shell. The heads bearing the same cross-shaped symbol on the top have been dated to the early eighth century BC (see Mair 1990a:28).

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

the palace are basically in square figures. The traditional style of architecture in Beijing was to build quadrangular houses, compounds with houses around a courtyard.

All these considerations give grounds for assuming that the Chinese perception of cropfield has a cognitive significance, enabling us to see how the words for 'four' come to be connected with the words for 'village, town' in Eurasia.

4. Roman Perception of Cropland

Whether we think of the shape of cropfields, town, or even architecture and art, Mommsen (1908) provided us valuable information on and trenchant analysis of the principle of the square carried out by the Romans. In this section I will make great use of the book of Mommsen by citing his passages, without which, indeed, my analysis cannot proceed.

Agriculture played a substantial role in the early Roman economy and in shaping custom and ideology of the Italians. According to Mommsen (1908), 'the transition from a pastoral to an agricultural economy preceded the immigration of the Italians into the peninsula. Agriculture continued to be the main support of all the communities in Italy, of the Sabellians and Etruscans no less than of the Latins'. (236) 'Legend and faith, laws and manners, among the Italians as among the Hellenes are throughout associated with agriculture. Nothing is more significant in this respect than the close connection of agriculture with marriage and the foundation of cities during the earliest epoch of culture...The use of the plough in the founding of cities is well known'. (26) As for the division of land into squares, I would like to quote the whole passage of Mommsen, as the text is very typical and contains full details of interest:

> Cultivation of the soil cannot be conceived without some measurement of it, however rude. Accordingly, the measures of surface and mode of setting off boundaries rest, like agriculture itself, on a like basis among the both peoples. The Oscan and Umbrian *vorsus* of one hundred square feet corresponds exactly with the Greek *plethron*. The principle of marking off boundaries was also the same. The land-measurer adjusted his position with reference to one of the cardinal points, and proceeded to draw in the first place two lines, one from north to

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

> south, and another from east to west, his station being at their point of intersection (*templum*, τέμενος from τέμνω); then he drew at certain fixed distances lines parallel to these, and by this process produced a series of rectangular pieces of ground, the corners of which were marked by boundary posts (*termini*, in Sicilian inscriptions τέρμονες, usually ὅροι). This mode of defining boundaries, which is also Etruscan but is hardly of Etruscan origin, we find among the Romans, Umbrians, Samnites, and also in very ancient records of the Tarentine Heracleots, who are as little likely to have borrowed it from the Italians as the Italians from the Tarentines: it is an ancient possession common to all. A peculiar characteristic of the Romans, on the other hand, was their rigid carrying out of the principle of the square; even where the sea or a river formed a natural boundary, they did not accept it, but wound up their allocation of the land with the last complete square. (26-7)

It is crucial to note that Mommsen observed that "the town, which in the course of centuries grew up as Rome, in its original form embraced according to trustworthy testimony only the Palatine, or 'square Rome' (*Roma quadrata*), as it was called in later times from the irregularly quadrangular form of the Palatine hill". (62) 'The temple in fine, which in the period of the empire was called the Tuscanic and was regarded as a kind of style co-ordinate with the various Greek temple-structures, not only generally resembled the Greek temple in being an enclosed space (*cella*) usually quadrangular, over which walls and columns raised aloft a sloping roof, but was also in details, especially in the column itself and its architectural features, thoroughly dependent on the Greek system'. (304) 'The peculiar characteristics of the Tuscan temple—the outline approaching nearer to a square, the higher gable, the greater breadth of the intervals between the columns, above all, the increased inclination of the roof and the singular projection of the roof-corbels beyond the supporting columns—all arose out of the greater approximation of the temple to the dwelling-house, and out of the peculiarities of wooden architecture'. (305)

If we concentrate our attention on the details elucidated by Mommsen, we can go a step further in utilizing his inspiration to relate the ancient square measurement to the number four.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

5. Etymological Analyses

Given the reliable sources discussed in Section 2 and the geometric square perceptions of cropfield, village, and town by Chinese and Romans discussed in Sections 3 and 4, I strongly believe that the principle of the square is a natural and spontaneous phenomenon which must be seen in a wider cognitive linguistic context. That context embodies a visual and then psychological association of square figures with the numeral 'four'. Such an association could have once been widespread in various ways in the Eurasian landmass stretching from Europe to China. The observable traces of this association are to be found in the languages spoken in this continent as the result of long-term close contact. In the following discussions I will endeavor to explore what we do not yet know by drawing on what we already know: I will test my assumption that some languages may have words for 'farm' or 'village' which phonetically correspond to the words for 'four' or 'square' in other languages by presenting a number of etymologies in Indo-European, Altaic, and Chinese.

(1) OE. *ðorp* 'farm, village', English *thorp, thorpe*
WMo. *dörben*, Dagur *durb* (*durbën*), EYu *dörwen*, Monguor *dərən*, Baoan *däraŋ*, Dongxiang *jiëron* 'four'
Hexi *de*[9] 'four'
OT. *tört*, Tatar *dört*, WYu *diort*, Salar *diod* 'four'

OE *ðorp* 'hamlet, village, farm, estate' is widely distributed throughout Germanic languages. It is connected with the following words: Old Frisian *thorp*, *therp* 'village', modern Frisian *terp* 'village, village-mound', Old Saxon *thorp* (Middle Low German,

[9] *Hexi* is the name of a language recorded in Chinese characters in *Hexi Yi Yu* 'Hexi-Chinese Glossary', which seems to belong to the Chinese-Barbarian glossary series compiled during China's Ming dynasty (1368-1644). This material is accessible to us through the appendix of Chen's (1982) paper. I am transcribing Hexi words and Chinese words in romanizations. At the end of the article the reader will find a glossary where some terms are given in Chinese characters according to alphabetical order.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Low German, Middle Dutch, Dutch *dorp*, Low German and East Frisian *dörp*), OHG *dorf* 'village', Old Norse *þorp* 'village, hamlet, farmstead', Norwegian *torp*, Swedish *torp* 'cottage, little farm', Danish *torp* 'farmstead, hamlet, borough', Gothic *þaurp* 'estate, land, field'. These words are from Old Germanic (Teutonic) **þorpo^{m}*. However, its ulterior etymology is doubtful; its original sense and its development in the Germanic languages is not clear. The word *ðorp* was not a frequent word in Old English, being chiefly found in Glosses and Vocabularies, in form *ðrop*, which was also the prevailing form in Middle English down to 1400. The word *ðorp* appears once in late Old English and in the north in the 14th century, and may really be due to Norse influence. In various forms such as *Thorpe*, *Throop*, *Thrupp*, the word occurs as a place-name, and it is a frequent second element in these in the forms *-thorpe*, *-thrup*, *-trup*, chiefly in the Danelaw district.[10] According to Baugh and Cable (1993:96), some 300 names like *Althorp*, *Bishopsthorpe*, *Gawthorpe*, and *Linthorpe* contain the Scandinavian word *thorpe* (village).

The bilabial consonant *b* in WMo *dörben* (following the trill *r*) is dropped in some western Mongolic languages (Monguor, Baoan, Dongxiang). The bilabial *b* may drop or weaken to bilabial or labiodental fricative in these languages, e.g. MMo *harban*, WMo *arban*, Dagur *harb*, EYu *harwan*, Monguor *harvan*, Baoan *harvaŋ*, Dongxiang *haran* 'ten'. Phonetically, the Germanic words are quite similar to the Mongolic words for 'four'. As WMo *dörben* and Dagur *durbën* can well serve as toponyms and ethnonyms, OE *ðorp* might have once meant 'four' or 'square' in denoting 'farm, village' and in serving as place names. If my etymological explanations are right, these words are a solid piece of evidence for early contact between Mongolic and Germanic peoples in Inner Asia.

Tacitus observed the Germans in the north-west of Europe not living in cities, and not even having their houses set close together. They lived apart, dotted here and there. Every man left an open space round his house. They did not even make any use of little stone or tiles; what served their every purpose was ugly timber, both unimpressive and unattractive. They had also the habit of hollowing out caves underground and heaping masses of refuse on the top. In

[10] For detailed accounts of OE *ðorp* and its Germanic cognates see OED, Volume XVII, p. 980.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

these they could escape the winter's cold and store their produce. Lands were taken into occupation, turn and turn about, by whole villages in proportion to the number of cultivators, and were then allotted in order of rank. The distribution was made easy by the vast extent of open land. They changed their plow-lands yearly, and still there was ground to spare. Although the land occupied by the Germans was fertile in grain crops, it was harder to persuade a German to plow the land and to await its annual produce with patience than to challenge a foe and earn the prize of wounds. Instead, the care of house, hearth and fields was left to the women, old men and weaklings of the family. It was usual for states to make voluntary and individual contributions of cattle or agricultural produce to the chiefs.[11] Tacitus' records show that the Germans were indeed engaged in agriculture though it was not so advanced as that of the Romans. Presumably the Germanic cultivators used plows attached to oxen or horses to prepare a field for planting. Since the Germans used plows, their plow-lands must have been square or rectangular in shape because it is impossible to think that the plow-lands could have been round or triangular. In Germanic scattered settlements the house and the open space left around the house could have been square or rectangular in shape, and most hamlets square as well. And the underground caves and cattle pens might most probably be square, as I know that most enclosures for cattle are of square shape in Mongolia. The timbers used to build houses were possibly of squared shapes. We have archaeological evidence in support of this claim. The only archaeological evidence of what Heroic Age royal halls in England were like comes from Yeavering in Glendale in present-day Northumberland, where the site of one of the royal township of the English kings of Northumbria has been identified and investigated. The wooden buildings of which only the postholes have survived, probably belonged to the seventh century. The walls of the king's hall were built of squared timber posts set upright in a foundation trench (see Arnold 1975:91). According to Arnold, the royal hall seems to have been a large wooden rectangular barn-like structure surrounded by smaller wooden buildings some of which served as separate sleeping quarters

[11] For general accounts of the Germanic cultural aspects see Tacitus, pp. 114, 122, 104, 113.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

or 'bowers' for the king and for especially favored guests (90). All these factors suggest that OE *ðorp* and its Germanic cognates once had a meaning 'four' or 'square' when they started to denote 'farm, hamlet, village' and occur in place names.

If we construe an Anglo-Saxon hamlet (*ðorp*) in terms of the families who live in it, we will understand better how Anglo-Saxon's family and its supporting land in England are tied up closely with each other. The *Tribal Hidage* is one of our single most important resources for understanding the political and social structure of early Anglo-Saxon England. This document is a listing of the names of tribal groups (generally found in the possessive plural), each of whom is assigned a numerical assessment in hides. The term *hide* originally designated a nuclear family or the land needed to support a nuclear family (fixed in the later medieval period at 120 acres) (see Toon 1992:35). In dealing with the German hide, Mommsen (1908:122) said that the homestead frequently, at least among the Anglo-Saxons, amounted to a tenth of the hide. Regarding the Roman territory, Mommsen (1908:45) maintained that it was divided in the earliest times into a number of clan-districts, which were subsequently employed in the formation of the earliest 'rural wards' (*tribus rusticae*). Mommsen's analysis is of great help for us in detecting how early people used numerals (such as Latin *tribus*) to denote a basic unit of their communities.

Added to this etymology also may be the place names *Turfan* (or *Turpan*) in Xinjiang and *ðrw'n* in Gansu, China. Turfan was once an important station in connecting the transcontinental Silk Road in history and also the place where the Tokharian documents were found. This name must have been given by the early local inhabitants in the form of **turp(a)* or **turf(a)* and adopted by the Turkic people as Turpan. The Staël-Holstein scroll includes a Khotanese list of sites along the Silk Road. Among these, it names 'the town of Tturpaṃni'. The date of this scroll has been determined to be 757-758 or 769-770, 865, 925, and 1028 respectively by different scholars (see Mair 1990b:27). In my recent conference paper (Wang 1997b) I suggested a connection of the name Turfan with OE *turf* 'turf, sod, soil; greensward', OHG *zurba/zurf*, Old Norse *torf(a)* 'turf' and Sanskrit *darbhá-* 'tuft of grass' (PIE

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

**dorbhos* 'sod, tuft of grass').[12] Despite the fact that I consider this analysis as one possible solution, now I would like to provide an alternative approach to the name Turfan in the etymological context for the word 'square'. Traditionally, the local Turkic people interpret Turfan as 'watch-tower'. Until about the thirteenth or fourteenth century when it gradually began to become known outside of the immediate area, Turfan may have been a fortified watchtower-cum-tax station at a strategic point in the desert, like so many others dotted along the Central Asian trade routes. In other words, Turfan during the medieval period seems to have been a fortified checkpoint protecting a succession of princely walled cities in the vicinity (see Mair 1991:929). As I have discussed before, square watch-tower and fortress are often named after the words for 'four' or 'square', thus fitting into the cognitive category we have been discussing. As for the word *ðrw'n*, it was the ancient Sogdian designation for Dunhuang which was an important station along the Silk Road. Mair (1991:911) reconstructs this name as **Druwan* or **Thruwān*. I prefer to restore it as **durwan* or **thurwan* because, as Henning (1938:545) points out, vowel-reduction is well attested for the first syllable of Sogdian words. The word was found in the Sogdian letters discovered about 60 miles west of Dunhuang, which are generally accepted to date from 311-312 AD (see Mair 1991:911). Although we cannot prove whether the Sogdian word *ðrw'n* meant 'four' or 'square', the habitual designation of places and countries by words for 'four' was confirmed in the historical texts. The Sogdian Karabalgasun inscription contains the ethnonym *ctβ'r twγr'k* 'the Four-Twγry' for a country or nation in Central Asia, and Uigur documents record *tört küsän* 'the Four-Küsän' for a country of importance for the propagation of Buddhism (see Henning 1938:545, 558).

(2) ToB. *twere* 'door', Sanskrit *dvā́r-* 'door', Avestan *dvarəm* 'gate, yard', Armenian *durn* 'door, gate, yard', Homeric Greek *thúrē* 'door, gate, entry, yard', Old Irish *dorus* 'door', Gothic *daúr* 'door', OHG *turi* 'door', OE *duru*

[12] My argument was that a Germanic group arrived at what is now Turfan, settled there, and began to designate it with their native word *turf*. Subsequently, they held the place to be their soil and their native land.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

'door, gate, wicket', OHG *tor* 'gate', OE *dor* 'gate', OE *torr* 'tower, watch-tower', Latin *turris* 'tower; castle, palace'. Sumerian *tùr* 'yard; cattle yard; enclosure for cattle' (see Gamkrelidze and Ivanov (1995:647, 773)

Ma. *durun* 'form, shape, figure; model, mold; rule, norm'. Evenki *durun* 'pattern, embroidery'. Manchu *turun* 'large standard (used for naming towns in history); large (square) flag'

OT. *tura:* 'fortifications', *to:r* 'a net for catching birds or fish', Uigur *tor*, Salar *dor* 'net'. Uigur *torla-* 'to knot net'. Salar *torë* 'three-year-old horse'

Uig. *därizä*, Kazak *tereze*, Salar *terje* 'window'. Dagur *dërjë* '(square) cotton-padded mattress'

Chi. *dou* (Cantonese *dau*, Old Chinese **dɔ*) 'a unit of dry measure for grain (cubic container = 1 decaliter)'

I assume that the words originally meant 'four, square' or 'square frame'. Archaeological findings show that many doors, gates, and windows for buildings and tombs are square or rectangular figures, not to mention that doors and windows in modern buildings basically form rectangular patterns. And a net consists of numerous square forms. In this respect we can have a support from the following European languages: French *carré* 'square, squared (stone), *carreau* 'small square; tile, flag; floor; window-pane; Italian *quadro* 'square; painting, picture; frame; four-edged, four-sided; square flooring-tile'.

In including Salar *torë* 'three-year-old horse' in this etymology we should note that the age references to cattle may vary in different languages depending on specific occasions when using a cognate or borrowed word. For instance, the Kirgiz word *beš* 'five' yields the age reference 'four' in the root *bëš-* as contained in the phrases *bëštë cëkma* 'four-year-old bull' and *bëštë inek* 'four-year-old cow'. WMo *ğunan* 'three-year-old animal' and *ğunajin* 'three-year-old (of female animals)' correspond to the numeral *ğurban* 'three'. When the words came into the Western Yugur, their age references became different: *gunan* 'three/four-year-old bull', *gunanjar* 'two-year-old bull'. However, Salar *torë* 'three-year-old horse' may have a connection with Kazak *torpak*, Kirgiz *torpok* 'two-year-old bull'. If that is so, the latter two words would converge with WMo *dörben* 'four'. Also,

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

ToB *ṣeske*, ToA *sasak* 'one' is found having a connection with the following Altaic words for 'one-year-, two-year-, three-year-old sheep': Uzbek *šišak*, Turkish *şişek*, Azerbaijan *šišäk*, Karachai-Balkar *išäk*, Turkmenian *išček* (< **šišek*) 'one-year old, yearling (lamb)'; Nogai *sisek*, Kazak *sek* 'one-year-old lamb'; OT *tişek*, Kirgiz *šišäk* 'two-year-old sheep'; Yakut *tisege* 'three-year-old animal'. MMo *silegü* (**silgü* < **sisgü*) 'two-year old', WMo *silüge*, Khalkha *šülge* 'two-year-old sheep, three-year-old sheep'. I assume that all these Altaic words initially meant 'one-year-old sheep' as preserved in some Turkic languages in this sense and subsequently shifted to denote 'two-year-old' or 'three-year-old'. And this Tokharian word was borrowed into Altaic when the ancient Altaic people were rich with sheep. Clauson (1972:563) and Tekin (1975:282) maintain that OT *tişek* 'two-year-old sheep' derived from *tişe:-* 'to lose the milk-teeth' and **tïšä-* 'to teethe', respectively. As the Altaic words match the Tokharian word well in phonetic and semantic grounds and OT *tişek* can be reconstructed **sişek*, I see no necessity to accept the proposed etymology. Considering this kind of reasonable numbering disagreement in vocabulary diffusion, I would like to provide an additional argument concerning Jurchen *uci* (Manchu *uce*) and Ulcha *ucë* 'door'. I shall argue that Jurchen *uci* once as a numeral meant 'four' or 'square' when it became specialized in the sense of 'door'. My point is that Jurchen *uci* has a link with the Turkic word for 'three': OT *üç*, Uigur *üc*, Salar *uj* and WYu *uṣ* 'three'. In addition to the change in counting reference, the Jurchen word *uci* underwent some phonetic changes in other Tungusic languages, e.g. Evenki *urkë* 'door' derived from **üc+ke* through rhotacism. At this point we should also mention that OE *ðorp* is suggested to be related to Latin *tribus* (**tri-* 'three') 'tribe'. It is indeed not unusual that a given numeral was modifiable in terms of numbering reference.

According to Clauson (1972:531), OT *tura:* meant basically 'something to shelter behind' and was used both for permanent fortifications and for portable 'breastworks' which could be moved about and fixed temporarily to the ground. It was a loanword in the first meaning in Mongolian (WMo *tur-a* 'fortress, city, town'). The Turkic word survives in most northeastern Turkic languages and Khakas where the meaning has attenuated, through 'stockade, fortified village' to 'town' and even 'house'. Mair (1990b:37) has

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

recently argued that the Turkish *tura* 'settlement' was a term that spread far and wide in the Turkish ecumene, witness the town in Hungary and the river in Russia that bore precisely that name. In Uigur, for example, we find it with the meaning 'stockade, walled village', and in many cognate words signifying various types of dwellings.

In addition to meaning 'a unit of dry measure for grain', the Chinese word *dou* also denotes 'the Big Dipper, the Dipper' and 'the eighth of the twenty-eight constellations into which the celestial sphere was divided in ancient Chinese astronomy (consisting of six stars in the shape of ladle in Sagittarius)'. It is by no means coincidence that Chinese *dou* denotes both 'square container used for dry measure for grain' and 'the Big Dipper, the Dipper'. In many cultures the configuration of the Big Dipper is compared to the plow as an important farming tool or simply alternatively called the Plow, as in English. The head part of the Big Dipper consists of four stars shaped as a square. As ancient Chinese writers observe, of the Big Dipper's seven stars, the four head stars resemble a square container used for dry measure for grain, and the three stars resemble the handle (see *Ci yuan* 1995:0739). Through these historical records we can assume that the Chinese word *dou* originally meant 'square' and was subsequently taken to denote 'a square container used for dry measure for grain' as inspired by the square shape of the head of the Dipper. Even today the Chinese people in some regions practice the Dipper worship ceremony in the evening. However, as the weighing system is modernized, people use buckets or plastic vessels containing grain for symbolizing the Dipper. The sense of 'square' is transparent in the following Chinese compounds with the first component of the word *dou*: *douche* 'trolley (in a mine or at a construction site), tram', *doufang* 'a square sheet of paper used for painting or calligraphy, painting or calligraphy done on a square sheet of paper', *doushi* 'small room'.

(3) OE. *tūn* 'enclosure, garden, field, yard; farm, manor; homestead, dwelling, house; group of houses, village, town', Dutch *tuin* 'garden', OHG *zūn* 'fence, hedge', Germanic **tūnaz*, **tūnam*, which are related to Celtic **dūn-* in place names (e.g. *Augustodunum*), Old Irish *dūn*, Welsh *din* 'fort, castle, camp, fortified places'

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Ma. *duin*, Solon *diyin*, Sibe *duyin*, Hezhe *duyin*, Orochun *diyin* 'four'. Tajik *diyur* 'village'

WMo. *dönen* 'four-year-old male animal', *dönejin* 'four-year-old female animal', Manchu *dunen* 'four-year-old ox (or sheep)', Uigur *dönän* 'four-year-old horse', *dönüjün* 'four-year-old ox'

Chi. *tun* (Cantonese *tün*) 'village', *du* 'city', *tian* (Cantonese *tin*) 'field, cropfield, farm', *dian* (Cantonese *din*) 'hall, palace, temple'

Finds of square and rectangular buildings, building materials, towns, fortresses, and citadels in the Eurasian continent are numerous enough to show that the words in (3) are compatible with each other. In Europe, in Maes Howe, which was dated to Neolithic architecture in Scotland and built around 2600 BC, the walls at first vertical, then sloping slightly inward, are roofed by square vault, or arched roof, created by corbeling out successive layers of stone blocks. The walls of the main chamber have square openings leading to cells of different sizes. Stonehenge in Salisbury Plain, England, c. 2100-2000 BC, one of the most celebrated megalithic monuments in Europe, consists of an outer circle of immense squared uprights made of sarsen (see Lucie-Smith 1992:25).

Chang (1988:17) compares Chinese *tun* 'village' and *cun* 'village' with OE *tūn* 'town' and Chinese *du* 'city' with OE *dor* 'gate'. In ancient Chinese the word *tun* means 'to gather', 'to garrison', 'mound' and also serves as a toponym and family name. Chinese *du* designate 'capital city', 'city', 'administrative region', and 'to gather'.

(4) OE. *fēower*, OHG *fior*, Old Norse *fjórir* 'four'

Lat. *foris* '(leaf of) a door, gate, (pl.) folding doors', *forēs* 'outside, outdoor'

Hexi *fu* 'paper'

Chi. *fang* [*faŋ*] (Cantonese *fɔŋ*, Minnan *hɔŋ*, Old Chinese **fˇwaŋ*) 'square', Chinese *fang* [*faŋ*] (Cantonese *fɔŋ*) 'house, room, cell, agency; the fourth of the twenty-eight constellations into which the celestial sphere was divided in ancient Chinese astronomy (consisting of four stars nearly in a straight line in Scorpio)'

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

OE *fēower* has been generally established as a reflection of PIE **qetwōr-* (or *k"etwó:r*) 'four'. Lass (1994:210), observing that the initial Germanic /f/ may seem puzzling in that it ought to presuppose PIE */p/ by Grimm's Law, goes on to say: there is a common development where */k^{w}/ > /p/ in the presence of another labial in the word...Gothic *fidwōr* transparently reflects an original */k^{w}etwó:r/ (with references therein).

The Roman forum, close to Palatine and Capitol, was a large public square that was the center of the city. Government meetings, business dealings, and other important activities took place in the Forum. For this reason, I wonder if we can try to put the Latin word *forum* (*fora*) in this layer of etymology. The existing approach to Latin *forum* and *foris* is to put them etymologically together with OE *duru* and *dor* 'door'. If that is so, we can hardly link these terms to the facts that the Roman forum was a square and that the Romans rigidly carried out the principle of the square in their field measurement and called Rome *Roma quadrata*. The etymology seems to me to have obscured the layer of cognation, though it strengthens the point that both Latin *forum*, *foris* and OE *duru*, *dor* 'door' are semantically aligned with the words for 'four'. It is my understanding that both door itself and a leaf of the door contained in the semantics of Latin *foris* must be basically square figures, and Latin *forēs* also referred to enclosure surrounding a house. We can avoid the difficulty caused by the existing explanations if we put these words together in one tier of the terms' etymology. The origin of Latin *fōrma* 'mold, form, shape, case' is uncertain. Under my analysis, the word may be allied with this etymology, too, for a mold and form could in all likelihood be of square shape. As an additional support for this etymology, we should note that Latin *fōrma* also means 'beauty'. Cross-linguistically, the word for 'square' tends to yield some commendatory senses: English *square* as an adjective has the senses of 'just, fair, honest, clear', and Chinese *faŋ* 'square' can mean 'honest, upright, fair-minded' as well.

As early as the beginning of the sixth century Chinese authors recorded the name *Fulin* referring to the Eastern Roman Empire (Byzantine Empire). This name has a few variant transcriptions in Chinese, such as *Pulan* and *Fuluni* and in Old Turkic inscriptions such as *Purum*. It has been suggested that all these variant

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

transcriptions of the name came from Iranian *Frwm*, Sogdian *From*, *Purum*, Zoroastrian Pahlavi *hrōm*, and Pāzand *arūm*, which was originated from *Rum*, the name for the Eastern Roman Empire. I disagree with this etymological interpretation, because there could hardly be a reason for these languages to put a prosthetic consonant before the name *Rum*. Rather, it was possible that Latin *forum* or *forānus* (with which the English word *foreign* is connected) diffused into these languages in the sense of 'district, region' and eventually came out with the specialized designation for the Empire. At this point, I should stress that the words for 'four' can serve as toponyms and ethnonyms. The transliterated Chinese name *Fulin* can be ultimately explained etymologically in terms of the word for 'four'. Phonetically, Chinese has no trill *r* and thus replaced it with the lateral *l*. And the Old Turkic seldom had the fricative *f*, especially in the word-initial position, and thus naturally modified it into *p*.

In ancient Chinese, in addition to the sense of 'square', the word *fang* has several related meanings such as 'square ship (combining two ships into a square one)', 'raft (square woods placed on water)', 'direction', 'place, locality, state (especially of foreign city-states and nomadic tribes)', and 'the earth, four directions'. It is interesting to note that graphically the Chinese word *fang* 'house' structurally consists of *hu* 'household' and *fang* 'square'. The composers of this character probably succeeded in observing that a family or household lived on a square place or building.

(5) Lat. *quattuor*, Lithuanian *keturi* 'four'
ToA. *kwaṣ-* 'village'. Hittite *kutt-* 'wall'
Tajik *qoš* 'enclosure'
WMo. *kotan* 'city, town, village, enclosure, fortress, citadel, city wall', Manchu *hoton* 'walled city, city wall'
Ma. *hošon* 'quarter, precinct, square', *hošo* 'corner, region, square', *hošonggo* 'square, four-sided', *hošotolo-* 'to make into a square'. WMo *kosiğun* 'areal unit', Manchu *gūsa* 'banner, administrative unit'
Ma. *hoošan* (< **hoš-*) 'paper (< square sheet)'
OT. *kïrk* (< **keš+k* 'four') 'forty'
Chi. *kui* (Old Chinese **kuəd*) 'the four stars in the bowl of the Big Dipper'

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

There are three old watch-towers with beacons on top in Yiwu County in the Hami area, Xinjiang which as historical remains functioned to give raid warnings along a trade route. One of them bears the name *Kuatur* (*Kuotu'er* in Chinese transcriptions, see Yang 1994:57), which may be from Latin *quattuor*. Some of watch-towers in the Tarim Basin must be very old. Bergman spotted a tower in the ancient Loulan sites, the base of which was about 5 meter square. The watch-tower is suggested to have been built in the period between BC 60 and the beginning of the first century AD (see Bergman 1939:43). Given such an early construction of watch-towers along the Silk Road, both local people and foreign travelers had a good opportunity to use the words for 'four, square' to refer to the towers.

In dealing with Saka scholars often use the term 'Khotanese Saka' (*huodan/hetian* in Chinese chronicles). The word *khotan*[13] deserves some discussion. Ancient towns essentially differ from modern ones in size, population, and infrastructure, and thus are something like an enhanced village or an agricultural settlement. Therefore, I shall argue that the term 'Khotanese Saka' refers to the semi-sedentary or semi-nomadic Saka who were to a degree engaged in agriculture in contrast to their nomadic counterpart. *Liao shi* (The History of Liao, 1974:451) recorded a Kitan town named *hodun/kodun*. I assume that the name meant 'village, town' in Kitan. Among the various Mongoli groups the Dagurs are well known for their agricultural legacy. Moreover, the Dagurs are traditionally dichotomized into *kotun Dagur* (or *kotuncian*) and *batgën Dagur* (or *batgëncian*). Literally, the term *kotun Dagur* means 'city Dagur', but they are villagers rather than city dwellers. As a matter of fact, the *kotun Dagur* are those who settled in the Qiqihar (City) area primarily for agricultural purposes. As for the meaning of the term *batgën Dagur*, suffice it to say that *batgën* is from Manchu *butha* 'hunting and fishing'.

The Hittite word for 'four' is conspicuously absent in comparative study of the Indo-European words for 'four'. Gamkrelidze and Ivanov (1995:743) point out that in Anatolian the original Indo-European word for 'four' is replaced by Hittite *me(i)u-*,

---

[13] Konow (1949:6) states that 'the speakers themselves used the name *Hvatanaa* = 'Khotanese'.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Luwian *mawa-*. Given this viewpoint, Hittite *kutt-* 'wall' has been outside the etymology for 'four' in existing research. Under my approach, Hittite *me(i)u-* goes with Latin *moenia* 'city-walls, ramparts, fortifications, city' as a same layer of cognation. In the course of development, Hittite *me(i)u-* and Latin *moenia* got registered in two related semantic directions.[14] Added to this etymology may be Chinese *men* (Cantonese *mun*, Old Chinese **muən*) 'door' as a square-shaped structure. The graphical representation of this Chinese word well corresponds to this square figure.

Gamkrelidze and Ivanov (1995:825) have provided a comprehensive collection of migratory terms for 'dwelling': Hittite *kutt-* 'wall', Greek *kotúlē* 'cave', Gothic *hēþjō*[15] 'room', Church Slavic *kot'c'* 'cell, nest', Turkic *kota* 'house', Finnish *kota* 'dwelling, tent, hut', *koti* 'house', Estonian *koda* 'house', Livian *kᵘodȧ* 'dwelling, house', Lapp *goatte* 'bear's den; Lapp tent'. In my opinion, it seems probable that Hittite *kutt-* originally meant 'four', but it later semantically shifted to mean 'wall' and left the vacancy for the word *me(i)u-* to fill in. As is already known, huge defensive walls, best seen in the 3-mile (5-km) circuit of Hattusas, the capital of Hittite in central Anatolia near the present Turkish village of Boğ azköy, are the most notable feature of Hittite archaeology. The same massive solidity can be seen in the architecture of the citadel and temples of the capital and at other sites such as Merish and Alaca Hüyük. At Boğazköy the main wall consists of an inner and outer shell of masonry with cross-walls between, forming a series of rectangular spaces. The outer shell of this wall is especially strong; it is constructed of massive stones of irregular shape, but with a preference for an approximately rectangular or five-sided form. Both walls are reinforced by projecting rectangular towers at intervals of

---

[14] It can be conjectured that Manchu *meyen* 'section, division; group, squadron, row' is an early loan from Hittite *me(i)u-* or Latin *moenia*. Presumably, Manchu *meyen* used to mean something like 'quarter'. In this regard we can consider the French word *quartier*, which in addition to its sense 'quarter' means 'part; piece, portion'.

[15] This Gothic word seems to me to have a connection with Manchu *hecen* 'city, city wall', Dagur *këjin* 'wall', and the ethnonym *Hëjën* (Hezhe) for a Tungusic people in China.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

about 100 feet (see Gurney 1990:91-92). Presumably the Hittites habitually called those defensive walls with the word for 'four' and eventually specialized it in the sense of 'wall'.

WMo *kosiğun* (*heshuo* and *heshun* in Chinese transcriptions) was used to serve as any of the numerous military-administrative areal units 'princedoms' into which the Mongolian tribes were organized under Ming (1368-1644) and Qing (1616-1911) dynasties, and during the period of the latter became known as 'banners'. The Mongols designated a large territory or state by using the word *ulus* which was divided into several regions called *kosiğun*. In its plural form the word *kosiğud* (*heshuote* in Chinese transcriptions) was a Mongolian tribal name in the past. Under the Manchu titular system the Manchu word *hošo* (WMo *košui* 'cardinal points; province') was prefixed to imperial princes and ranks of nobility for the purposes of conferring administrative power over a region.

The heritage of the Manchu *gūsa* (banner) system is still found in administrative divisions at the county level in the Inner Mongolia Autonomous Region. In history the banner system represents military-administrative organizations of the Manchus in the Qing dynasty. In 1601, the Jurchen (Manchu) leader Nurgaci initiated the four banners: the Yellow Banner, the White Banner, the Red Banner, and the Blue Banner. In 1615, with the subsequent development of the Jurchen military-administrative organizations the original four banners doubled to eight banners with edged colors on the existing ones. As we can see, the Manchus carried out the quadruple divisions on the basis of a square banner.

OT *kïrk* (Kirgiz *kërk*, Salar *œerëχ*) 'forty' deserves intensive attention here. A cross-linguistic survey of numerals shows that most ten's place numbers may be derived from their corresponding unit's place counterparts in one way or another. When we turn our attention to Turkic and Mongolic numerals, we see striking similarities between the two sets of numerals:

(6)	Old Turkic		Written Mongolian	
No.	Units	Tens	Units	Tens
1-10	*bi:r*	*o:n*	*nigen*	*arban*
2-20	*ékki:*	*yégirmi:*	*koyar*	*korin*
3-30	*üç*	*ottuz*	*ğurban*	*ğucin*
4-40	*tört*	*kïrk*	*dörben*	*döcin*

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

5-50	*bé:ş*	*ellig*	*tabun*	*tabin*
6-60	*altï:*	*altmïş*	*jirğuğan*	*jiran*
7-70	*yéti:*	*yétmiş*	*doloğan*	*dalan*
8-80	*sekkiz*	*seksö:n*	*naiman*	*nayan*
9-90	*tokku:z*	*tokso:n*	*yisün*	*yeren*

As we can easily understand, the numerals for 'one-ten' in both languages differ totally from each other. In Mongolic the remaining numerals are mutually related, with the tens derived from the corresponding units. As for Turkic, the numerals for 'four-forty' and 'five-fifty' are of different origins. I assume that OT *kïrk* 'forty' initially meant 'four' being connected with Tokharian *kwaṣ-*, Latin *quattuor* and Lithuanian *keturi*. However, it later shifted to denote 'forty' by yielding its lot to the invading Old Turkic word *tört* 'four'[16], which became widespread throughout the Turkic languages. In order to justify this etymology, we need to reconstruct Proto-Turkic **keš+k* (or **köš+k*) for OT *kïrk*. Through rhotacism the archaic **š* changed to the liquid *r* in the V__C environment.

In its early circulation OT **keš-* in the sense of 'four' gave rise to a few more tiers of semantic shifts. The first is OT *kerpiç*[17] (< **keš+pic*), Kirgiz *këš*, *kirpic*, Uzbek *kiš*, and Tuva *gerbiš* 'brick, sun-dried brick', for brick as quadrate building materials being of solid and stable nature is likely to be denoted by the word for 'four, square'. Clauson (1972:737), arguing of probable borrowing of both bricks and the word for them by Turks from some other people, observes that OT *kerpiç* does not exist in south-eastern and south-central Turkic groups which use Persian *xişt*. The second word is OT *küri* 'a measure of capacity or weight, for dry goods like grain', because a unit of dry measure for grain is overwhelmingly a cubic

---

[16] In Turkic, Tuva *dörtön* and WYu *diordon* 'forty' are cognate to OT *tört* 'four'.

[17] WMo *ger* 'house, dwelling; case, receptacle', Dagur *kərjë* 'vegetable garden' and ToB *kerc(i)ye* 'palace' represent the same layer of diffusion of OT *kerpiç*, for bricks as square objects are used to build house and palace. Clauson (1972:664) holds that OT *karşï* 'palace' is probably a loan from ToB *kerc(i)ye*. Gamkrelidze and Ivanov (1995:647) suggests a connection of ToB *kerciyi* (pl.) with Hittite *gurta-* 'fortress' and Sanskrit *gṛhá-* 'dwelling, house'.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

wooden container. Clauson (1972:737) argues that OT *küri* is undoubtedly a loanword, perhaps Tokharian, but does not tell from which Tokharian word the Turkic word comes. The third is OT (Gancak) *körge:* 'dish made of wood' and Chagatai *körgö* 'table'. In this connection, the semantic parallel between the word for 'square' and the words for 'square dish, table' is further evidenced both by Monguor (a Mongolic language) *dörəljin* 'square, wooden plate' and WYu (a Turkic language) *diorverjin* 'square, plate, table'. When I lived in the Dagur regions in Inner Mongolia and Heilongjiang Province, I found that the traditional tables used by the Dagurs are of square shape, and the Dagurs have their meals at tables sitting cross-legged[18]. The fourth is WYu *kesörgë* (**kes-*) 'lizard (four-legged reptile)' as is self-explanatory.

In line with the words for 'four', at a remote period of contact, the Italic word for 'forty' might be once used in the sense of 'square' and taken to denote 'enclosure' and the like in Manchu and Mongolian. Italian *quaranta* and French *quarante* 'forty' (English *quarantine*) is related to Manchu *kūwaran* 'enclosure, encirclement, corral; camp (military), barracks; workshop, plant, factory; market place; yard of a monastery or temple', *kūwara-* 'to surround, encircle', *kūwarana-* 'to encircle, circle', WMo *kuwaran* 'barracks', Dagur *kuārən* 'barracks; graveyard'. The existence of the consonant *w* in these words is just a matter of Manchu and Mongolian orthography, being intended to avoid spelling the two contagious vowels *ua*. It is the case with Chinese loanwords with the diphthong *ua*, for example: Chinese *hua* 'flower' and WMo *kuwar* 'flower', Chinese *huang* 'imperial' and WMo *kuwang* 'imperial', Chinese *huajiang* 'painter' and Manchu *hūwajan* 'painter', Chinese *huangli* 'calendar' and Manchu *hūwangli* 'calendar'. In the same way, the Tajik word *cal* [ʧʰal] 'forty' penetrated into Manchu as *jalan* [ʧalan]

[18] It is worthy of notice how ancient people had meals. The Huns ate at small wooden tables and used wooden, metal, clay, and—probably—leather dishes (see Lubo-Lesnichenko 1989:52). According to Mommsen (1908:28), the earliest Romans 'agreed with the Cretans and Laconians in taking their meals not, as afterwards the custom among both peoples, in a reclining, but in a stting posture'. In an ancient site in the Tarim Basin, Stein (1928:201) found an oblong, four-footed wooden eating-tray.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

'measure word for walls and fences, subdivision of a banner (as an administrative unit), section, world'.

Dong (1967:211) reconstructs an ancient Chinese pronunciation **k'wâd* for the word *kui*. In Old Chinese (10th century BC—5th century AD) the word *kui* (**k'wâd*) denotes, among other things, 'soup ladle' and 'the four stars in the bowl of the Big Dipper'. In annotations to the '*Tianguan shu* (Treatise on Astronomy)' in the *Shi ji* (Records of the Grand Historian) ancient Chinese commentators characterize the Dipper as the northern square dipper (*bei fang dou*, 1292) and interpret *kui* in terms of the head of the Dipper (1293) and as the four stars in the bowl of the Big Dipper (1291-2). Interestingly, the commentators of the *Shi ji* observe that the shape of the Han (dynasty) towns, which are to be built with twelve *li* each in latitude and longitude, resembles the northern Dipper (399). In his *Shi ji* the great Chinese historian Sima Qian (2nd century BC) compares the Dipper to an emperor's chariot and says that the Dipper operating in center controls four directions and establishes four seasons (1291)[19]. In addition, *Han shu* (written by Ban Gu, AD 32-92) continues to use the word *kui* to designate the head or the four stars in the bowl of the Big Dipper (1275). Given the phonetic and semantic features of the word *kui*, I would etymologically connect it to the Latin word *quattuor*.

(7) ToA. *śtwar* (< **śitwar*), ToB *śtwer*, *śwer* 'four'
ME. *cite* 'town'
Hexi *śe'er*[20] 'city'
Chi. *si* (Cantonese *sei*) 'four'

Probably before 1200 the Middle English word *cite* meant 'town, borough', especially a walled town or city and its government, also a cathedral town with its bishopric (see Barnhart 1995:127). It is

[19] *Han shu* repeats this statement, but changes the 'four directions' to 'four seas' (1274).

[20] In transcribing this word I followed the Mandarin pronunciations of the characters used in the original transcriptions. If we make reference to the Cantonese pronunciations which are widely considered to be conservative, Hexi *śe'er* 'city' should be transcribed *sityi* or *t͡sityi*, which corresponds to English *city*.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

widely suggested that ME *cite* was borrowed from Old French *cité*, which in turn derived from Latin *cīvitās* 'state, city' formed on *cīvis* 'citizen'. In my opinion, Tokharian *śtwar*, *śtwer*, *śwer* 'four' has a role to play in giving rise to the meaning 'town' or 'citizen' in English and Latin. Phonetically, the consonant *t* is conspicuously absent in ToB *śwer* (**śtwer*), which is compatible with Latin *cīvis*. In Altaic languages, some toponyms may possibly have a connection with the words in consideration: WYu *ṣot* (place name) and Salar *sotuŋ*, *sotuŋpo* (village names).

(8) Per. *čahār*, Avestan *čaθwārō* 'four'
WMo. *cağarsun*/ *cağasun*, MMo *ca'alsun*, Monguor *cālsë*, Dagur *cās* 'paper'
Uigur *casa*, Uzbek *casa* 'square'

In his expedition to the Tarim Basin, Stein (1928:193) excavated a small piece of torn paper in a refuse deposit, with a few characters distinctly resembling Early Sogdian writing. I assume that the Sogdians who were very active along the Silk Road got papers from Chinese and once denoted it with the Persian word *čahār* 'four'. Judging from Sogdian ethnic connection with the Persians, the Mongolic word for 'paper' came from a Persian source through Sogdian, and the Turkic word[21] probably from Avestan. It is a historical fact that sheet papers are in square figures. In the Juyan remains of western Inner Mongolia two sheets of paper were excavated in the 1970s; one 21 cm X 19 cm in size, and the other 11.5 cm X 9 cm. Together with the sheets are wooden tablets which can be dated back not later than BC 54. This dating seems to be an important reference to when the sheets are made (see Xue 1991:93). The proposed shift of meaning 'four' or 'square' to 'paper' is strongly corroborated by the evidence that the Chinese word *fang* 'square' in (4) was also used to denote wooden tablets for writing in ancient times. So there emerged such Chinese expressions as *fangce* 'square book = tablet book' in ancient Chinese literatures. At the ancient Niya site in Xinjiang, Stein (1964:72, 69) spotted two series

[21] This word has a limited distribution in the Turkic languages spoken in China. The other words or phrases for 'square' are Kazak *šarše*, Kirgiz *carcë*, Tatar *dört pušmak*, and Salar *diotsili* 'square'.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

of oblong tablets and a few oblong wooden pieces for writing. Apparently, when people first saw and used tablet or paper, they simply named it by its quadrate shape. Paper received a quadrate perception, as did plate and table.

A Mongolian region or tribe has the name *Cağar* (*Chahar*), which appears to be so called after the Persian word *čahār* 'four'. As an additional support for this kind of usage, I would like to mention Greek (Homeric) *téssares* 'four' which may have served as toponyms. Ancient Chinese writers recorded the name *Chisan* referring both to the port city Alexandra and to a prefecture in the Western Regions which are the ancient Chinese name for Xinjiang and its adjacent areas (see *Sanguo zhi* 860, *Xin Tang shu* 1135, 6260). This name must have been given not by Chinese, but by the indigenous people in the localities. Chinese historical phonologists have reconstructed the archaic pronunciation of the word *chi* as **dǐei* and the word *san* as **san*. Combining these reconstructions, we have **dǐeisan*. As the final consonant *r* is often represented by the nasal *n* in ancient Chinese transcriptions, we can modify these reconstructions as **desar* and connect it with Greek *téssares*. It is not by accident that the two places far apart bear the same name, for, as we may well believe, Greek *téssares* diffused into the languages in the regions and the local people used it for toponyms. Anyway, the possibility of a linkage between Greek *téssares* 'four' and the recurrent name *Chisan* (**desar*) seems to me quite plausible.

In this section I have discussed several sets of words from Indo-European, Altaic, and Chinese. These words are pretty similar phonetically, but they may differ in their semantics. To reconcile the semantic gaps and bring these words together etymologically, I have constructed cognitive theories revolving around the words for 'four, square' and 'village, town' drawing on the historical contact between the three language stocks. The semantic transfer from 'four, square' to 'village, town' can be best seen through farming. Agriculture was an important sector in economy of the Eastern Central Asia where the said contact took place extensively. According to archaeological findings, agriculture developed into a mainstream economy with supplementary animal husbandry during the Bronze Age (see Yu 1996:15). In history, the ecological environments of the oases around the Tarim Basin were in good condition. Although the area had many small states, its total population was at a moderate level.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

The main crops cultivated in the Tarim Basin were wheat, barley, and broom corn millet. However, the need for more land and for more intensive cultivation led to receding and further draining of rivers. In this way, overcropping eventually devastated the landscape, resulting in large-scale desertification.

With the development of agriculture people managed to form sizable villages consisting of individual houses and then build towns. All these settlements could not been conceived to exist without having geometric square figures. The Loulan remains in the Tarim Basin are in square figures. According to Stein (1964:124), some much-broken narrow terraces visible here and there to the south and north of the area occupied by the Loulan ruins had once formed part of ramparts built of stamped clay with intervening layers of tamarisk brushwood. This circumvallation formed originally a square of about 1020 feet inside. The Niya remains are ten kilometers in length and five kilometers in width, arrayed with stupa, temple, town walls, residence areas, houses, dams, enclosures for sheep , orchard, and fences. In his expedition to the Niya site Stein spotted a belt of open ground where remains of broken pottery, an enclosure made of thickly packed rushes, a line of trunks of dead fruit trees and planted poplars, suggested the site of an ancient farm (see Stein 1964:67). The vines were planted in regular rows with about twenty-feet intervals between the rows, and along these, quite close to each vine stem, were fixed stout posts, which once carried the trellis needed for the trailing branches (see Stein 1928:145). In the Altaic communities, the excavated towns basically form squares. There is a town in the suburb of Hohhot City, Inner Mongolia, built during the Han dynasty (BC 206-AD 220). The whole town shapes like two joined squares, 730 meters long east-west and 365 meters wide south-north. An ancient Xiongnu town located in Mongolia is of square shape surrounded by walls on four sides. The Kitan and Mongolian towns are also mostly in squares. So the geometric square figures became an indispensable motif in overall settlement planning and architecture.

I should stress that the Roman and Greek influence reached Central Asia very early. At the ancient Loulan sites there has been found an abundance of fine pieces of wood carving, including beams of over seven feet long, showing decorative motifs of a distinctly Hellenistic or Greco-Buddhist type, fine pieces from elegantly carved

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

and lacquered furniture, fragments of carved wooden panels with motif almost Roman in style, decorated textiles such as a well-preserved slipper adorned with tapestry designs unmistakably Western (see Stein 1964:125).

6. Conclusion

This paper serves as an attempt to bring a number of scattered related words from various languages into order and system. Whether this attempt bears up under serious scrutiny will depend on how we explain the manifold contact between various languages in Inner Asia and how we understand the cognitive processes underlying the parallel between the number four, square figures and words for 'village, town'. I have stressed that the quadrilateral perception carried a somewhat universal cognitive power cross-culturally in Eurasia, producing lexemes for 'four' at least as much it did lexemes for 'cropfield, village, town' and some other four-sided figures and objects. When a quadrate cognition was prevalent, people did not hesitate to designate cropfield, house, village, town, city, tribe, region, state, palace, door, brick, plate, table, form, paper, container, and the like with the words for 'four' or 'square'. Therefore the role of the number four and its corresponding geometric square figures can by no means be overrated in these appellations. The practice of the quadrate field measurement, as Mommsen (1908:26) stresses, was an ancient possession common to all. He also remarks: 'An historical connection between the Indo-Germanic agriculture and that of the Chinese, Aramaean, and Egyptian stocks can hardly be disputed' (23). We have well-known historical facts that the Chinese and the Romans carried out the principle of the square in their cropfield divisions. Further we have the testimony of the contemporary practice of name-giving by using the words for 'four' and 'square' in Indo-European, Altaic, and Chinese.

Mainly during the Bronze Age and early Iron Age, in the course of vocabulary diffusion guided by cognitive processes in Inner Asia, certain tribes may have intercepted a word for 'four' or 'square' and preserved this meaning, and other tribes may have transformed the original meaning and further developed a new meaning of 'village, town'. Accordingly, some words became specialized in the sense of 'four' or 'square' in some languages as WMo *dörben* 'four', Manchu

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

duin 'four', *hošon* 'square', and Latin *quattuor* 'four', and other words became specialized in the sense of 'farm, village, town' in the languages such as OE *ðorp* 'farm', *tūn* 'town', Dutch *tuin* 'garden', and ToA *kwaṣ-* 'village'. So long as we keep thinking in terms of geometric perception of the use of quadrilateral figures to which many ancient peoples were tied up, we will be able to see that people, consciously or subconsciously, cognitively translated the number four into square figures. In this way there have appeared semantic gaps between the words for 'four' and 'village, town'. In this connection we can find a support from Mommsen's analysis as to the great antiquity of the Roman threefold division of the community.[22] According to Mommsen (1908:54), the expression *tribus* , like our 'quarter', early lost its original signification of number. However, he also points out: "To facilitate the levying of the infantry, the city was distributed into four 'parts' (*tribus*); by which the old triple division was superseded, at least so far as concerned its local significance" (117). We can see through Mommsen's observation how the Latin word *tribus* is likewise used for the triple and quadruple division. If we thoroughly examine the words for 'four' and their usage in ethnonyms and toponyms, we will give the same explanation of, for example, OE *ðorp* and *tūn*, which at a remote period once had the sense of 'four' or 'square' and subsequently lost its original signification of number. These words were unlikely to have diffused through a single track, rather they circulated through multiple channels, numerical and geometric.

At any given point in time, especially in ancient history, the amount of words is not unlimited. But the need for social communication is unbounded, and linguistic competence imposes no limitation on language speakers. The point is that early people did not need to be wholly original in coining many new words. It did not matter at all if the same root or word had been used to denote

---

[22] However, in a footnote Mommsen (1908:54) also raised the question whether a triple division of the community was not a fundamental principle of the Graeco-Italian: in that case the triple division of the Roman community would not be referable to the amalgamation of several once independent tribes. The Umbrian may possibly have adopted the word *tribus* only when they came under the influence of Roman rule; it cannot with certainty be traced in Oscan.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

different items. What counted was meeting social needs and fitting new situations. All that could serve to give an existing word for 'four' certain new meanings sequel to others, thus creating a thick linguistic stratum. Ancient people are indeed to be credited for their insights into geometric perception which played a vital role in lexicon proliferation.

Two problems have not been discussed in this paper. First, I have so far argued that the words for 'four' give rise to designating 'square', 'farm', and 'village'. Today for us, the number four is so simple that we may ignore the fact that many languages exist in which numerals do not exceed two or three. Given this fact, we cannot absolutely rule out the possibility that the word for 'square' or 'cropfield' triggered the formation of the number four. But the determination of whether the individual words discussed in this paper are first used to denote the number four or otherwise a square is difficult. So, for the time being I have adopted the approach that the number four is most basic. Second, the widespread distribution of the words in consideration resulted from diffusion in repeated waves and circulations beyond an initial historical origin from Europe to Inner Asia and China or vice versa. For some words, we can assume with certainty their distribution; for example, WMo *cağ-arsun* 'paper' is borrowed from Persian *čahār* 'four'. But for some other words, it is difficult to pinpoint from which original source the words diffused, for a natural flow of words was accomplished unhindered throughout Eurasia.

References

Arnold, Ralph

1975 Royal Halls–The Sutton Hoo Ship Burial. *Beowulf*, edited by Joseph F. Tuso, 90-94. New York & London: W. W. Norton & Company.

Barnhart, Robert K. (ed.)

1995 *The Barnhart Concise Dictionary of Etymology*. New York: HarperCollins Publishers.

Baugh, Albert C. & Thomas Cable

1993 *A History of the English Language*. London: Routledge.

Bergman, Folke

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

1939 *Archaeological Researches in Sinkiang.* Stockholm: Bokförlags Aktiebolaget Thule.

Chang, Tsung-tung

1988 Indo-European Vocabulary in Old Chinese. *Sino-Platonic Papers* 7:1-56.

Chen, Naixiong

1982 *Hexi Yi Yu zhong de A'ertai chengfen* (The Altaic elements in *Hexi Glossary*). *Zhongguo yuyan xuebao* (Journal of Chinese Linguistics) 1:233-249.

Ci yuan (An Etymological Dictionary of Chinese), 1-4 *heding ben.*

1995 Beijing: Shangwu yinshuguan.

Clauson, Gerard

1956 The case against the Altaic theory. *Central Asiatic Journal* 2:181-187.

1972 *An Etymological Dictionary of Pre-Thirteenth-Century Turkish.* London: Oxford University Press.

Dong, Tonghe

1967 *Shanggu yinyun biaogao* (Phonology of the Old Chinese). Taibei: Zhongyang yanjiuyuan lishi yuyan yanjiusuo.

Gamkrelidze, Thomas V. & Vjačeslav V. Ivanov

1995 *Indo-European and the Indo-Europeans.* Berlin & New York: Mouton de Gruyter.

Gurney, O. R.

1990 *The Hittites.* London: Penguin Books.

Han shu (History of the Han)

Reprinted in 1962. Beijing: Zhonghua shuju.

Henning, W. B.

1938 Argi and the 'Tokharians'. *Bulletin of the School of Oriental Studies* 9:545-571.

Konow, Sten

1949 *Primer of Khotanese Saka.* Oslo: H. Aschehoug & Co. (W. Nygaard).

Lass, Roger

1994 *Old English: A historical linguistic companion.* Cambridge: Cambridge University Press.

Liao shi (History of the Liao)

Reprinted in 1974. Beijing: Zhonghua shuju.

Lubo-Lesnichenko, Evgenii I.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

1989 The Huns, third century B.C. to sixth century A.D. *Nomads of Eurasia*, edited by Vladimir N. Basilov, 41-54. Los Angeles: Natural History Museum of Los Angeles County.

Lucie-Smith, Edward

1992 *Art & Civilisation*. London: Laurence King.

Mair, Victor H.

1990a Old Sinitic **mˠag*, Old Persian *magus*, and English '*magician*'. *Early China* 15.27-47.

1990b *Tufan* and *Tulufan*: the origin of the Old Chinese names for Tibet and Turfan. *Central & Inner Asian Studies* 4.14-70.

1991 Reflections on the origins of the modern standard Mandarin place-name 'Dunhuang'—with an added note on the identity of the modern Uighur place-name 'Turpan'. *Ji Xianlin jiaoshou bashi huadan jinian lunwenji* (Papers in Honour of Prof. Dr. Ji Xianlin on the Occasion of His 80th Birthday), edited by Li Zheng and Jiang Zhongxin, 901-954. Nanchang: Jiangxi renmin chubanshe.

1996 Language and script; biology, archaeology, and (pre)history. *International Review of Chinese Linguistics* 1.31-41.

Mommsen, Theodor

1908 *The History of Rome*. Vol. 1. London: Macmillan.

Niu, Ruchen

1994 *Xinjiang diming gaishuo* (Introduction to Place Names in Xinjiang). Beijing: Zhongyang minzu daxue chubanshe.

OED = *The Oxford English Dictionary*, second edition

1989 Prepared by J. A. Simpson and E. S. C. Weiner. Oxford: Clarendon Press.

Poppe, Nicholas

1954 Grammar of Written Mongolian. Wiesbaden: Otto Harrassowitz.

1960 *Vergleichende Grammatik der altaischen Sprachen*. Teil 1. Wiesbaden: Otto Harrassowitz.

1965 *Introduction to Altaic Linguistics*. Wiesbaden: Otto Harrassowitz.

Posch, Udo

1958 On the affinity of the Altaic languages, I. *Central Asiatic Journal* 3:267-288.

Qu, Yingjie

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

1997 *Zhoudai ducheng bijiao yanjiu. Zhongguo shi yanjiu* (Study of Chinese History) 2:19-28.

Ramstedt, G. J.

1981 *A'ertai yuyanxue daolun* (Introduction to Altaic Linguistics). Beijing: Zhongguo shehui kexue chubanshe. (A Chinese translation from the Russian edition of 1957)

Sanguo zhi (History of the Three Kingdoms)

Reprinted in 1959. Beijing: Zhonghua shuju.

Shi ji (Records of the Grand Historian)

Reprinted in 1959. Beijing: Zhonghua shuju.

Sommarström, Bo.

1956, 1958. *Archaeological Researches in the Edsen-Gol Region, Inner Mongolia.* Stockholm: Statens Ethnografiska Museum.

Stein, Aurel

1928 *Innermost Asia: Detailed report of explorations in Central Asia, Kan-su and Eastern Īrān*, Vol. 1. Oxford: Clarendon Press.

1964 *On Ancient Central-Asian Tracks.* New York: Pantheon Books.

Tacitus

1948 *On Britain and Germany*, a new translation by H. Mattingly. The Penguin Classics.

Tekin, Talât

1975 Further evidence for 'zetacism' and 'sigmatism'. *Researches in Altaic Languages*, edited by Louis Ligeti, 275-284. Budapest: Akadémiai Kiadó.

Temple, Robert

1986 *The Genius of China: 3,000 years of science, discovery, and invention.* New York: Simon & Schuster.

The Sacred Books of the East, Vol. IV

1969 *The Zend-Avesta*, Part I: *The Vendīdād.* Delhi: Motilal Banarsidass.

Toon, Thomas E.

1992 The social and political contexts of language change in Anglo-Saxon England. *Englisn in Its Social Contexts*, edited by Tim William Machan and Charles T. Scott, 28-46. New York & Oxford: Oxford University Press.

Wang, Penglin

1997a A linguistic approach to Inner Asian ethnonyms. To appear in *The Bronze Age and Early Iron Age People of Eastern Central*

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Asia, edited by Victor H. Mair. Washington, DC: *The Journal of Indo-European Studies*, Monograph.

1997b The correspondence between Old English *l* and Mongolic *n*. Paper presented at the 40th Meeting of the Permanent International Altaistic Conference, Brigham Young University, June 2-7.

Xin Tang shu (New History of the Tang)
Reprinted in 1975. Beijing: Zhonghua shuju.

Xue, Yingqun

1991 *Juyan Han jian tonglun* (Introduction to the Han tablets). Lanzhou: Gansu jiaoyu chubanshe.

Yang, Yiyong

1994 *Tangdai bei, zhong dao dui Qingdai Balikun jiaotong zhi yingxiang. Caoyuan sichou zhi lu yu zhong ya wenming* (The Steppe Silk Road and the Central Asian Civilization), edited by Zhang Zhiyao, 55-65. Ürümqi: Xinjiang meishu sheying chubanshe.

Yu, Taishan

1996 *Xiyu tongshi* (History of the Western Regions). Zhengzhou: Zhongzhou guji chubanshe.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Glossary

Transcriptions	Characters	Glosses
Cağar	察哈爾	'(place name)'
Chisan	遲散	'(place name)'
cun	村	'village'
da fang cheng	大方城	'the big square town'
de	得	'four'
dian	殿	'hall'
dou	斗	'unit for dry measure'
douche	斗車	'trolley'
doufang	斗方	'square sheet'
doushi	斗室	'small room'
du	都	'city'
fang	方	'square'
fang	房	'house, a set of four stars'
fangce	方册	'square book'
fu	幅	'four'
hu	户	'household'
jing	井	'a well'
jingtianzhi	井田制	'well-field system'
Kuatur	闊吐爾	'(name for watch-tower)'
kui	魁	'the four stars in the bowl of the Big Dipper'
men	門	'door'
še'er	設兒	'city'
si	四	'four'
tian	田	'cropfield'
tun	屯	'village'
xiao fang cheng	小方城	'the small square town'

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

THE KURGAN CULTURE AND THE INDO-EUROPEANIZATION OF EUROPE

by **Marija Gimbutas**

(Selected articles from 1952 to 1993)

EDITED BY MIRIAM ROBBINS DEXTER AND KARLENE JONES-BLEY

CONTENTS

1952 On the Origin of North Indo-Europeans
1963 The Indo-Europeans: Archaeological Problems
1966 The Relative Chronology of Neolithic and Chalcolithic Cultures in Eastern Europe North of the Balkan Peninsula and the Black Sea
1970 Proto-Indo-European Culture: The Kurgan Culture During the Fifth, Fourth and Third Millennia B.C.
1972 Old Europe c. 7000-3500 B.C, The Earliest European Civilization Before the Infiltration of the Indo-European Peoples
1973 The Beginnings of the Bronze Age of Europe and the Indo-Europeans 3500-2500 B.C.
1974 An Archaeologist's View of PIE in 1975
1977 The First Wave of Eurasian Steppe Pastoralists into Copper Age Europe
1979 The Three Waves of Steppe People into East Central Europe
1980 The Kurgan Wave #2 (c. 3400-3200 B.C.) into Europe and the Following Transformation of Culture
1985 Primary and Secondary Homeland of the Indo-Europeans: Comments on Gamkrelidze-Ivanov
1986 Remarks on the Ethnogenesis of the Indo-Europeans in Europe
1988 Accounting for a Great Change: A Review of *Archaeology and Language* by C. Renfrew
1990 The Collision of Two Ideologies
1993 The Fall and Transformation of Old Europe (A previously unpublished manuscript written specially for this collection)
Martin E. Huld: The Vocabulary of Proto-Indo-European Culture

ISBN 0-941694-56-9 : 406 pages : (Mastercard/Visa accepted)

Price $48.00 (add $2.50 USA postage: $3.50 foreign postage)

Institute for the Study of Man

1133 13th St. NW., #C-2, Washington D.C. 20005

Tel: (202) 371-2700 Fax (202) 371-1523

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Cultural Evolution and Gender Roles: Advantage...Patriarchy

Nancy S. Coney
Western Illinois University
Wade C. Mackey
Tomball College, Texas

Cultural evolution occurs when some cultural facets increase or come to dominant a sphere of activity; while other facets decrease their influence or disappear altogether. Since the 1960s, a number of increased options have accrued to women in many areas of the world's community of cultures. The concept of gender role egalitarianism has dominated the social landscape in many countries. The increase in options is especially manifest in the domains of education and occupation plus political power structures. What is less obvious, or at least less publicized, is the dynamic wherein the more that short term options become available to women, the more restrictive become the long term trends. Demographic data are analyzed which strongly infer that a self-regulating mechanism exists which, over generations, creates stasis on the part of traditional gender roles.

Key words: Gender roles, education, fertility, cross-cultural surveys, tertiary education, patriarchy

Rule #1: All politics are local.
Rep. Tip O'Neill
Rule #2: All long-term politics are reproductive strategies.
Rules #3: All effective long term politics camouflage Rule #2.
Ipsoc Macqulre

That cultures change over time can be accepted as a given. For example, the Rome of the 20th century is quite different from the Rome of Caesar. The inhabitants of Manhattan, New York, have undergone a series of transformations since 1620. Chaucer's England is clearly distinct from the Beatles' England. The direction and speed

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

and magnitude of cultural changes have received a good deal of theoretical attention (Carneiro 1973, Lowie 1920, Steward 1955, Morgan 1963, Maine 1873, Tylor 1958, Frazer 1958, see Harris [1971] for a review of the literature on macrotheories). Impetuses of such changes have been conceptualized in the form of shifts in technology (White 1959, Childe 1951), economic structure (Fischer 1996, Harris 1979, Marx 1904), communication efficacy and forms of media (McLuhan 1964, 1967, 1989)

The argument for this paper is that the generalized reproductive strategy which a society adopts is fundamental to that society's trajectory, and hence to its viability across generations. Furthermore, it is suggested that all reproductive strategies are not of equal efficacy, but that some are superior to their competitors. Conversely, some are deficient when compared to alternatives. The argument, which is essentially deductive in character, is predicated on four premises or facts. These items are not proffered as being new or innovative, but are presented under the rubric that occasionally a reminder can trump an inspiration. The four premises are presented below.

Prolegomenon

Fact #1: Each individual who is alive at Time 1 will be dead at some point Time 2. Said less prosaically, everyone is mortal.

Fact #2: While everyone currently alive is guaranteed to have had ancestors, no one is guaranteed to have descendants.

Fact #3: Inhabitable lands do not remain empty. Farmlands of deceased celibate farmers do not stay fallow for long. Cottages of dead, childless couples do not remain empty for long.

Fact #4: Humans are intensely bio-cultural beings. Wherever a human decides to move, he or she carries along a biological heritage and a socialization heritage.

The four facts seem fairly immutable. Each one will be briefly examined.

Fact #1: Everyone is mortal.

This item is, hopefully, intuitively obvious, if somewhat

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

non-pleasing to contemplate, and needs no further elaboration.

Fact #2: Everyone has ancestors, but everyone may not have descendants.

By being born, any given person is likely to have had ancestors who (a) had access to the other sex which resulted in sexual intimacy, (b) were fertile, (c) were willing to spend sufficient amounts of finite time and energy to rear the next generation to independence. Given the altricial nature of humans, the time and energy is measured in years or decades rather than mere moments. However, if an individual is born and does survive to maturity, that individual is not similarly guaranteed (a) attractiveness, (b) fertility, and (c) self-sacrifice. That is, merely because a person has had parents and grandparents, that person is not necessitated to have children and grandchildren. There is no imperative of symmetry between past and future generations.

Although individuals have no choice on whether to be born or not, people can choose to mate or not. People can choose to bring children to term or not. People can choose to invest – lightly, moderately, or heavily – in their children or not.

Fact #3: Good land does not remain barren of people If governments, climate, and accessibility are not prohibitive, people will move into lands which are otherwise unoccupied by other people.

The more prime the land, the more numerous and more exuberant are the individuals who would settle the opened territory. Migrants crossed the Bering Strait thousands of years ago to occupy North and South America. Europeans crossed the Atlantic Ocean hundreds of years ago to settle (what to them were) unoccupied continents. As soon as water-craft were sufficiently improved, the islands of the Pacific were populated by sailors and their descendants. With the exception of Antarctica, people have wedged themselves into virtually any ecological nook and cranny which could sustain life.

When the last aboriginal Tasmanian died, Tasmania was not without a citizenry. Whatever the fate of the Mbuti pygmies, the Capoids, the San, or the Yanomamo, their homelands will not be without homesteaders. Reverting back to Fact #2, across generations, all homelands will be peopled by groups who had both ancestors and

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

descendants.

Fact #4: Humans are bio-cultural beings. Whatever the mix of genes – nature – and socialization traditions – nurture – every human is a product of both forces.

For any given behavior, there are others who may argue, with both heat and light, on the dominance of nature over nurture or the reverse. The argument here is simply that both forces are extant, and extant to a non-zero degree for virtually any important behavior or trait imaginable. Every adult reflects both (i) the genetic package which allowed his or her ancestors to survive and propagate plus (ii) the socialization traditions which successfully reared that adult to maturity. To the extent that organization inhibits re-organization, childhood inculcations will bias adult psychosocial behaviors, i.e. as the sapling is bent, so grows the tree.

Demographic Variability

Given the above, the germane question becomes: Is there a fundamental demographic homogeneity across societies or are there systematic, non-trivial differences?

This is a question that can be answered. Data were available, across nations, on the median rate of natural increase for the 1990s (United Nations 1995, U.S. Bureau of the Census 1995). "Natural increase" is determined by subtracting "death rates" (number of deaths per 1000 population) from "birth rates" (number of births per 1000 population) for any given year. If the resulting number is positive, the population is growing. If the number is negative, the population is shrinking. If the number is zero, then the population is in equilibrium. For a 130 nation sample, the mean annual percentage of natural increase was 1.78% (sd = 1.23%). See Appendix I for the data by individual nation. Thus, there appears to be real differences on the demographics across nations. Some nations are in population stasis, and some are growing robustly.

Now let's look at two demographic polarities: Europe and Africa. The rate of natural increase (2.7% [sd = .7%]) for the 36 countries in the African sample was 6.75 times the rate of natural increase (0.4% [sd = .4%]) for the 29 countries in the European sample. Note that each country is weighted equally. The differential of 6.75, almost

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

TABLE 1.

Highest (top 10) and lowest (bottom 10) fertility rates (mean number of children per woman) by country and geographical area (Smith-Morris 1990, United Nations 1990).

Highest fertility:				Lowest fertility:			
Rank	Country	Fertility	Area	Rank	Country	Fertility	Area
1	Rwanda	8.29	Africa	1	West Germany	1.38	Europe
2	Kenya	8.12	Africa	2	Denmark	1.45	Europe
3	Cote d'Ivoire	7.41	Africa		Netherlands	1.45	Europe
4	Zambia	7.20	Africa		Italy	1.45	Europe
5	Oman	7.17	Asia		Luxembourg	1.45	Europe
	Saudi Arabia	7.17	Asia	6	Austria	1.50	Europe
				7	Switzerland	1.55	Europe
	Jordan	7.17	Asia		Belgium	1.55	Europe
8	Niger	7.10	Africa	9	Finland	1.65	Europe
	Tanzania	7.10	Africa		Sweden	1.65	Europe
10	Nigeria	7.00	Africa				
Mean		7.37				1.51	
s		0.45				0.09	

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

with the force of a definition, means that Africa, relative to Europe, will have an increasingly larger percentage or proportion of the world's population for each generation that the differential continues. Whatever the composition of the biocultural mosaic which is being exercised in Africa, it is more prolific than the biocultural mosaic being exercised in Europe.

In addition, in terms of the mean number of children per woman – across all the surveyed countries – Africa had 7 of the 10 highest averages (the remaining three were Mideast countries wherein Islam is the pre-dominant religion of the citizenry). In contrast, Europe had all 10 of the lowest mean number of children per woman.

The German Example

Next, on a smaller scale, let us examine the recent demographics of a European example: Germany. In 1990, (West) Germany's rate of natural increase was slightly negative (-0.1% per year). Of interest is the composition and the trends of the births that did occur. Germany is a nation which receives a large number of immigrants. The immigrants, by definition, are not native Germans. These individuals bring with them their own biocultural heritages into the new land. They marry either each other or native Germans, and have children. The trends are interesting for both marriage patterns and for birthing patterns. From 1950 to 1990, the proportion of marriages involving non-Germans more than doubled (Statistisches Bundesamt 1992).[1] The same pattern is found in births.

From 1960 to 1990, the proportion of births wherein at least one of the parents was non-German increased eightfold (from 2% to

[1] In 1950, 95.4% of the marriages in Germany were between two Germans. The remaining 4.6% of the marriages involved at least one non-German (1.0% two non-Germans, 2.9% a German bride & a non-German groom, 0.7% a German groom & a non-German bride). However, by 1990, only 88.8% of the marriages were between two Germans, and 11.2% of the marriages involved at least one non-German (1.6% two non-Germans, 5.3% a German bride & a non-German groom, and 4.3% a German groom & a non-German bride). The proportion of marriages involving non-Germans more than doubled in the forty year gap (Statistisches Bundesamt 1992).

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

16.9%) (Statistisches Bundesamt 1992).[2] In addition, when fertility rates, as measured by children ever born (live) per thousand women, are used as the index, a similar picture emerges. In 1970, the fertility rate was 2010 lifetime births per 1000 German women and 2176 for non-German women. That is, the rate was about 8% higher for non-German women. By 1990, the rate for German women dropped to 1420 lifetime births and the rate for non-German women had dropped to 1900; yet was nearly a third higher than that of German women (Statistisches Bundesamt 1992). In terms of overall population growth in Germany, a hefty 128% of Germany's growth is due to immigration (Martin & Widgren 1996).

Thus, even though native Germans are reproducing below replacement value, the land is not becoming empty, non-Germans are more than willing and able to move and to take up the slack. (See Coleman [1994] for similar examples from other European countries and see Morris (1997) for further examples and analysis).

The Moslem Swathe

Of what shall prove to be of special interest to this exercise is a swathe of countries which runs eastward from Mauritania across northern Africa to Pakistan. The Moslem faith is dominant within the nations of this swathe. Furthermore, the level of fertility was generating a level of natural increase which was higher than the world's average. The average rate of natural increase (3.0%; sd = 1.1%) for the sub-sample (n = 22) was higher than the rest of the sample (1.52%; s.d. = 1.1 %; n = 108) (t = 5.55, df = 128, $p < .01$; 2-tailed).

---

[2] In 1960, 92.5% of the births in Germany were of German parents (another 6.3% of the children were born to single mother Germans). Two percent of the children were born to parents involving at least one non-German (0.1% a German father & a non-German mother, 0.7% a German mother & a non-German father, and 1.2% to non-German mothers [either a single parent or with a non-German father]). By 1990, the percentage of births to two German parents dropped to 73.5% (another 9.5% were born to single German mothers). By 1990, the percentage of births involving at least one non-German rose to 16.9% (2.2% a German father & a non-German mother, 2.8% a German mother & a non-German father, and 11.9% to non-German mothers [either a single parent birth or with a non-German father]) (Statistisches Bundesamt 1992).

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Women's Roles and Fertility

It is clear that women are the limiting resource when it comes to population change. If any factor impacts upon women's fertility, then the reverberations are felt throughout the rest of the society. It is equally clear that the women of some societies are opting for fewer children and that women in other societies are choosing to have more children. Said differently, some lifestyles of women eventuate in relatively more children, and alternative lifestyles result in relatively fewer children.

It is argued here that, across generations, any roles which conflict with the role of motherhood tend to be precluded systematically from women. Furthermore, this preclusion is self-generating. Said a little differently, Brown's (1970) thesis was that if a job or task interfered with mothering, then that task was given to men. If a task needed concentrated attention, over time, then men would be given that task, e.g. metallurgy, hunting large mammals, plowing. If a task could be stopped or started at will, with no loss of the quality of the product, then that task was often given to women, e.g. grinding, water gathering (see White, Burton, & Dow 1981, and White, Brudner, & Burton 1977 for refinements of the Brown thesis). Cross-cultural surveys have clearly noted that primary child caretaking, especially of infants, is a female task (Barry & Paxson 1971, Hewlett 1992, Mackey 1985, 1996, Murdock & Provost 1973, Weisner & Gallimore 1977). Usually the female is the mother, but, if not the mother, then female siblings or aunts or grandmothers fulfill the child caretaking role.

Framed differently, if the above is reasonably accurate, then expanding opportunities for women should be associated with a reduction in fertility: a reduction in natural increase. Such an hypothesis is testable.

Tertiary Education and Women's Options

Although "education" is fairly easy to reify beyond its actual value, there probably does exist an over-arching benefit to an individual if he or she has more literacy than less, and more understanding than less, and higher skill levels rather than lower levels. Within this context, the relationship between an access to skilled or professional occupational status and education beyond high school – tertiary

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

education – seems clear. If specialized training beyond a generalized high school (or equivalent) education is a pre-requisite for a particular occupation, then tertiary education seems necessary, albeit not sufficient, for entry into that occupation i.e. for expanded opportunities. And, indeed, other surveys have documented that, when women do have an opportunity to enter into a cash occupation, they do just that. For examples and discussion, see Caldwell (1982), Easterlin & Crimmins (1985), Handwerker (1986), Fawcett (1983), Day & Mackey 1986), cf Aghajanian (1979, 1988), Bradley (1984), Nag, White & Peet (1978), and Ross & Harris (1987).

However, as will be suggested later, if accessibility into occupational niches is not aligned with educational qualifications, then those qualifications lose their currency. The United Nations surveyed enrollment figures in tertiary educational institutions by nation and by gender (UNESCO 1994). Across the 130 nations which had data appropriate for UNESCO, the mean percentage of females, versus males, in tertiary education was 39.5% (sd = 15.5%). See Appendix I for data by nation.

The rate of natural increase was then correlated with the percentage of females (compared to males) who were enrolled in tertiary institutions. The relationship between the two was negative and fairly strong (r_p = -.414; $p < .01$; 2-tailed, n = 130). That is, as the proportion of tertiary students that were women was higher, the rate of natural increase became lower. Over 17% ($-.414^2 = .171$ = 17.1%) of the changes in levels of natural increase can be attributed to changes in levels of women in tertiary education.

Europe *versus* Africa

For the combined sample of 65 nations (Europe [n = 29] + Africa [n = 36] = 65), the correlation between the proportion of females in tertiary education and natural increase was negative and significant (r_p = -.665; $p < 001$; df = 63). Over 40% ($-.665^2 = .442$. = 44.2%) of the variance in the rate of natural increase can be attributed to the changes in the level of women in institutions in tertiary education. Europe has a relatively high level of women in tertiary institutions and a relatively low level of natural increase. Conversely, Africa, has a low level of women in tertiary institutions, but a relatively high level of natural increase.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

The Moslem Swathe

The Moslem Swathe data indicated no relationship between the education index and the level of natural increase (r_p, n.s.) Furthermore, the rate of natural increase was comparatively high. However, there was a strong relationship, within this sub-sample, between the level of income in the nation (measured by per capita income [Central Intelligence Agency 1992]) and the proportion of women in tertiary education (r_p = .867, n = 22, p < .01; 2-tailed; n = 22). The relationship was positive: the more the income, the higher the proportion of women in tertiary education. In addition, the richer Moslem countries (invariably from oil wealth) which had a high percentage of women students in tertiary education also had high levels of natural increase. This anomaly seems contradictory to the general trend and the specific thesis examined in this paper: women's enhanced opportunities through education is aligned with those women's lowered fertility. The contradiction may be more apparent than real. Plus, the anomaly also offers insight into the larger question of how current cultural evolution may be operating.

Authors, including feminist ideologues, who have written ethnographic accounts of the relevant Moslem countries invariably refer to the strongly patriarchal character of the political and economic structures. The question is never "Is the country patriarchal?" The ethnographic accounts revolve around how the patriarchy developed and how is it maintained. For example, Ahmed (1992) writes: The subordination of women in the ancient Middle East appears to have become institutionalized with the rise of urban societies and with the rise of the archaic state in particular..." and, as Islam crystallized its theology, "Implicit in this new order was the male right to control women and to interdict their interactions with other men. Thus the ground was prepared for the closures that would follow." See Kadioglu (1994) for a parallel argument for women's role in Turkey. Toubia (1988, pp. 2-3) makes the case quite clearly: "Arab women are dominated by men in every area of life in the patriarchal family system: state, political party, trade union and public and private institutions of all types." She noted that over 97% (97.2%) of the Yemeni women, as late as 1975, were illiterate. Badran (1995, p. 5) notes that "the woman was perceived as essentially or exclusively, a sexual being, unlike the man who was only partly understood in

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

terms of his sexuality'. Gerami (1996, p. 157) views the current version of Islamic fundamentalism as "nipping a very young feminist movement in the bud and under the banner of nature's mandate, pushed women further into the family. They managed to cast woman's individualistic identity as a perversion of her nature plotted by Western imperialists". Obermeyer (1995, p. 370) observes that the "Islamic emphasis on complementarity rather than equality in gender roles" makes dialogue with a worldview predicated on equality rather than complementarity extremely difficult. Inhorn (1996) writes that: "In a society (Egypt) where the patriarchal fertility mandate is emphatic, the social and psychological consequences of 'missing motherhood' – of being a woman unable to deliver a child for her husband, family, affines, community, faith, nation, and not inconsequentially her – are nothing if not profound". For reviews of the literature, see Al-Qazzaz (1977), Meghdessian, (1980), Mernisse (1991), Raccagni (1978), and Tucker (1993). For theoretical overviews, see Lerner (1986) and Walby (1990).

A survey of women legislatures found that women in the three Moslem nations, which were included in the survey (Egypt, Morocco, Turkey), averaged less than 2% of the legislators. This figure is contrasted to the average proportion of women legislators of 10.5% in the larger sample (n = 37). The comparable figure for the European nations (n = 12) was 15.6% (Nelson & Chowdbury 1994). Higher education and the mother-role

While it is arguable that the role of a tertiary student would be in conflict with the role of mother, a student's tertiary education would be finished by the woman in her low or middle twenties. Approximately two decades of fertility would be available to the educated woman for her to have an extended reproductive history. In other words, higher education for women need not be a restriction upon (relatively) high fertility levels. Both items can co-exist at high levels. And such a cultural tactic seems to be the one exercised by some countries in the Moslem Swathe. Thus, even though Moslem women in some countries were afforded easy access to higher education, their subsequent entry into professions and occupations wherein they could use their knowledge seems as equally as restrictive as if they did not have the advanced degree. That is, high levels of education, as well as low levels, were associated with high levels of

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

fertility. The well-educated Moslem women would not be able to transduce her acquired skills, gleaned from a tertiary institution, into her own occupational mobility. She would not be allowed occupational mobility.

On the other hand, if a completed tertiary degree is envisioned by the women as a means to a career, then a very different set of expectations applies. A (woman's) career can certainly last across her reproductive years. A career certainly can be in conflict with the expectations of the status-role complex of mother. If the conflict does occur or is strongly portended for the future, then the woman has choices to make. (1) She can maximize her career trajectory by remaining childless, or (2) she can jettison her career totally by adopting the mother-role and thereby eliminate any conflicts which would stem from occupational demands, or (3) she can strike a balance of sorts. She can bear a restricted number of children and also pursue her career. The demands of child-rearing, with few children, would not be zero, but would be of limited duration. Such a tactic certainly seems to be the route taken by many, if not most, European women. The median number of children per female is below two, and the entry of women into the paid labor force is quite substantial. As distinguished from her Moslem counter-part, the European woman can translate her high level of education into various professional or skilled occupational trajectories.

Discussion

If the four assumptions or facts which were presented earlier are accepted as fundamentally sound, then the argument becomes the following.

Biocultural groups, whose expectations for their women emphasize the mother role and constrict roles which compete with the mother-role, will systematically replace biocultural groups with any other formula.

A perusal of the surveyed countries does not isolate a cultural system which (a) has equality of opportunity for women and (b) has women's fertility at or above the average rate of natural increase. Several of the Moslem countries did have high levels of women in tertiary education, but these women are not afforded equal access

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

beyond the classrooms into the occupational infra-structure of the country. Other countries, epitomized by those in Europe, have high levels of female occupational access aligned with very low levels of fertility. For many of these countries, the number of births is well below the replacement value of 2100 children per 1000 women (assuming low infant mortality).

Framed a little differently, when women are presented with a number of life-style choices, the women do avail themselves to the full spectrum of those choices. To the extent that a woman's life-style choice is incompatible with the mother status-role complex, the number of children born per woman will be attenuated. To the extent that a woman's life-style choice is restricted to the mother status-role complex, then the number of children born per woman will be increased. Across generations, any cultural formula which maximizes the number of children born per woman has a manifest and obvious demographic advantage when compared to a cultural formula which treats the mother status-role complex as simply one life-style option which is neither more preferred nor less preferred than any of a wide range of alternative options.

In his seminal article "The Tragedy of the Commons", Hardin (1968) cleanly and cogently parsed out the problems inherent in the tenuous balance between individual freedom and the survival of the commonweal. That is, there are times when either individual freedom is curtailed or the overall society loses effectiveness and competitiveness. The argument presented here is that plural motherhood is a prototypic "tragedy of the commons". Again, individual death is a constant, but societal continuity is a variable. Whereas each women is guaranteed a death, none is guaranteed to be a multigravida.

To date, there seems to be no culture (or least one easily findable) which has solved the problem of offering gender equality for each individual while simultaneously sculpting expectations on the part of women to forfeit individual freedom/options and to raise children (at or beyond the level of population replacement). In a very real way, the dilemma will "solve" itself. That is, those cultural formulae with more circumscribed women's roles – i.e. motherhood – and higher fertility will systematically replace those cultural formulae which have more economic/occupational options for women,

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

but have lower fertility. The logical category of high levels of women's options and population replacement value is virtually the null set.

Two Models

Unfettered extrapolation of demographics has been, is, and will be a bane of the behavioral sciences. Nonetheless, a patterned trend does present itself. Women's equal access to education and career opportunities seems to be at loggerheads with population maintenance. When enhanced options of life-style are presented to women, they take them. Thus, when status-role complexes which are in conflict with the mother-role become viable for the women, the mother-role is, by definition, constricted. Fertility decreases.

Two models present themselves to help give context to his pattern. One is a cyclical model, and the second is a replacement model.

Cyclical Model

It is a logical category that there is some type of demographic thermostat which triggers greater fertility if replacement values are not met by a society's women. However, no such thermostat has been presented in the literature. In addition, no demographic data have been presented which would suggest that such a thermostat, in fact, exists at all. There is no evidence of cyclicity.

Replacement Model

It is also a logical category that (sub)groups of women with greater numbers of children would replace (sub)groups of women with fewer numbers of children. That is, lands would not remain empty if children-grown-to-adulthood fail to be conceived or to be raised. If a barren lineage disappears, then its geographical space would be filled by a more fertile lineage. This explanatory category seems better aligned with the data.

Thus, independent of intent, plans, desires, or contrivances on the part of political and social leaders, a social dynamic does seem to be in place and operative. The dynamic is suggested to have its own inertia. Namely, a cultural formula which presents to its women the availability of options that conflict with the mother-role is a cultural formula which is simultaneously non-competitive with the alternative.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

The reverse of this dynamic is that a cultural formula which presents to its women virtually no other role than that of "motherhood" is a cultural formula which is competitive and prone to replace alternatives.

CONCLUSION

In sum, cultural evolution is occurring now, as it has occurred in the past, and as it will occur in the future. This article argues that the inertia of this cultural evolution must be with those societies whose women give birth to more children. This demographic of "more children" is not evenly or randomly dispersed around the world. There is a strong relationship between restricting women's roles to motherhood and fecundity: more restriction yields higher fertility.

Thus, a cultural dynamic has evolved wherein an increased scope of women's choice in one generation reverberates in a decreased scope of women's choices in subsequent generations. That is, women with low fertility and a broad range of options must be systematically replaced with women of higher fertility and a narrower range of options. The three keys to the dynamic are (i) women, when exercising life-style choices which are wider than the mother role, will often choose a life-style which eventuates in two or fewer children per women, (ii) regardless of the life-style any individual leads, the individual will eventually die, and (iii) children are heavily influenced by their parents as they – the children – are socialized to independence. Women with more children will simply have greater influence on the next generation than women with fewer children. Given these three keys, it must be the case that – across generations – those cultural traditions which strive for gender equality or equity are under systematic pressure to be replaced by those cultural traditions which wedge women into a worldview that strongly emphasizes the mother role at the expense of alternative roles. To date, no socio-cultural formula has been instituted, or at least found, which results both in equal opportunity by gender and population replacement value or higher. Framed differently, in a cultural evolutionary contest between a patriarchal society versus a gender egalitarian society, the advantage lies clearly with the patriarchal society.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

APPENDIX I.

PERCENTAGE OF FEMALES IN TERTIARY INSTITUTIONS BY RATE OF NATURAL INCREASE (N = 130 COUNTRIES)

Continent/Country	Percentage Female	Annual rate of natural increase
AFRICA		
Algeria	31%	2.3%
Burkina Faso	13%	2.7%
Burundi	11%	2.2%
Central African Republic	8%	2.0%
Chad	9%	2.1%
Congo	19%	2.3%
Cote d'Ivoire	17%	3.4%
Egypt	35%	2.0%
Ethiopia	18%	2.9%
Gabon	20%	1.4%
Guinea	14%	2.2%
Kenya	26%	2.9%
Lesotho	53%	2.4%
Liberia	23%	4.5%
Libya	46%	3.7%
Madagascar	45%	3.2%
Malawi	28%	1.7%
Mali	14%	2.8%
Mauritania	15%	3.2%

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Continent/Country	Percentage female	Annual rate of natural increase
Mauritius	35%	1.1%
Morocco	36%	2.1%
Mozambique	23%	3.7%
Namibia	64%	3.4%
Niger	15%	3.3%
Nigeria	27%	3.2%
Rwanda	19%	2.7%
Senegal	18%	3.1%
Sierra Leone	16%	2.5%
Somalia	20%	3.1%
Sudan	40%	2.8%
Swaziland	47%	2.9%
Togo	13%	3.6%
Tunisia	41%	1.7%
Uganda	28%	2.3%
Tanzania	15%	2.5%
Zambia	14%	2.6%
NORTH AMERICA		
Bahamas	68%	1.1%
Barbados	60%	0.2%
Canada	54%	1.2%
Cuba	57%	0.7%
El Salvador	33%	2.0%
Guatemala	23%	2.5%

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Continent/Country	Percentage female	Annual rate of natural increase
Haiti	26%	1.5%
Honduras	38%	2.7%
Mexico	35%	1.9%
Nicaragua	52%	2.7%
Panama	58%	1.9%
Puerto Rico	59%	0.7%
Trinidad & Tobago	40%	0.1%
U.S. Virgin Islands	75%	-0.2%
United States	52%	1.0%
SOUTH AMERICA		
Argentina	50%	1.1%
Brazil	53%	1.2%
Chile	43%	1.5%
Columbia	52%	1.7%
Guyana	43%	-0.5%
Peru	35%	1.8%
Suriname	53%	1.6%
Venezuela	41%	2.1%
ASIA		
Afghanistan	31%	6.3%
Bahrain	56%	2.5%
Bangladesh	16%	2.3%
Bhutan	22%	2.3%

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Continent/Country	Percentage female	Annual rate of natural increase
Brunei	51%	2.6%
China	33%	1.0%
Cyprus	52%	0.9%
Hong Kong	35%	0.1%
India	30%	1.8%
Indonesia	32%	1.6%
Iran	29%	2.3%
Iraq	38%	2.9%
Israel	49%	2.5%
Japan	35%	0.3%
Jordan	48%	3.6%
Korea (DPR)	34%	1.7%
Korea (Rep. of)	32%	1.0%
Kuwait	60%	1.3%
Lao	32%	2.8%
Lebanon	48%	2.0%
Malaysia	45%	2.2%
Mongolia	63%	2.6%
Nepal	24%	2.4%
Oman	49%	3.8%
Pakistan	28%	2.6%
Philippines	59%	2.2%
Qatar	71%	2.6%
Saudi Arabia	43%	3.4%

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Continent/country	Percentage Female	Annual rate of natural increase
Singapore	42%	1.1%
Sri Lanka	40%	1.2%
Syria	37%	3.7%
Thailand	40%	1.2%
Turkey	34%	2.0%
United Arab Emirates	75%	4.6%
Viet Nam	24%	1.7%
Yemen	11%	4.4%
EUROPE		
Albania	52%	1.1%
Austria	46%	0.5%
Belarus	53%	0.3%
Belgium	48%	0.2%
Bulgaria	53%	-0.3%
Czechoslovakia (former)	46%	0.1%
Denmark	52%	0.2%
Finland	53%	0.3%
France	54%	0.5%
Germany (FR)	40%	0.8%
Germany (DR)	54%	-0.4%
Greece	50%	0.7%
Hungary	50%	-0.3%
Iceland	59%	0.8%
Ireland	46%	0.3%

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Continent/country	Percentage Female	Annual rate of natural increase
Italy	50%	0.2%
Luxembourg	34%	0.8%
Malta	44%	0.8%
Netherlands	44%	0.6%
Norway	53%	0.3%
Poland	57%	0.4%
Portugal	56%	0.4%
Romania	45%	0.1%
Spain	51%	0.3%
Switzerland	35%	0.7%
Ukraine	50%	0.3%
Sweden	54%	0.5%
United Kingdom	48%	0.3%
Yugoslavia SFR	51%	0.6%
OCEANIA		
Australia	53%	1.3%
Fiji	38%	1.1%
Guam	55%	2.4%
New Zealand	53%	0.5%
Papua New Guinea	24%	2.3%
Pacific Islands (Palau)	24%	1.7%

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

References

Aghajanian, A.
19791 Economic contribution of children and fertility in rural Iran: An overview. *Journal of South Asian and Middle Eastern Studies* 3: 21-30.
1988 The value of children in rural and urban Iran: A pilot study. *Journal of Comparative Family Studies* 19: 85-98.

Ahmed, L.
1992 Women and gender in Islam: Historical roots of a modern debate. New Haven: Yale University Press.

Al-Qazzaz, A.
1977 Women in the Middle East and North Africa: An annotated bibliography. Austin, Texas: Center for Middle Eastern Studies.

Badran, M.
1995 Feminists, Islam, and nation: Gender and the making of modern Egypt. Princeton, New Jersey: Princeton University, Press.

Barry. J. & L. Paxson
1971 Infancy and early childhood: cross-cultural codes 2. *Ethnology* 16: 191-230.

Bradley. C.
1984 The sexual division of labor and the value of children. *Behavior Science Research* 19: 159-185.

Brown, J. K.
1970 A note on the division of labor. *American Anthropologist* 72: 1073-1078.

Caldwell, J. C.
1982 Theory of fertility decline. NY: Academic Press.

Carneiro, R. L.
1973 Classical evolutionism. IN Main currents in cultural anthropogony. R. Naroll & F. Naroll (eds.) pp. 57-122. NY: Appleton-Century-Crofts.

Central Intelligence Agency
1992 The World Fact Book. McLean, VA: Brasseys.

Childe, V. C.
1951 Social evolution. NY: Henry Schuman.

Coleman, D. A.
1994 Trends in fertility and intermarriage among immigrant populations in Western Europe as measures of integration. *Journal of Biosocial Science* 26: 107-136.

Day R. D. & W. C. Mackey
1986 Children as resources: A cultural analysis. *Family Perspective*

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

20: 251-264.

Easterlin, R. A. & E. M. Crimmins
1985 The fertility revolution: A supply-demand analysis. Chicago: U. of Chicago Press.

Fawcett, J.
1983 Perceptions of the value of children: Satisfaction and costs. IN Determinants of fertility in developing countries. (eds.) R. A. Bulatao et al. NY: Academic Press, pp. 429-444.

Fischer D. H.
1996 The great wave: Price revolutions and the rhythm of history. NY: Oxford: Oxford University Press.

Frazer, J. G.
1958 The Golden Bough. NY: Macmillan.

Gerami S.
1996 Women and fundamentalism: Islam and Christianity. NY: Garland.

Handwerker, W. P.
1986 The modern demographic transition: An analysis of subsistence choices and reproductive consequences. *American Anthropologist* 88: 400-417.

Hardin, G.
1968 The tragedy of the commons. *Science* 162: 1243-1248.

Harris, M.
1971 The Rise of Anthropological Theory. NY: Thomas Y. Crowell.

Harris, M.
1979 Cultural Materialism. NY: Random House.

Hewlett, B. (ed.).
1992 Father-child relations: Cultural and biosocial contexts. NY: Aldine de Gruyter.

Inhorn, M. C.
1996 Infertility and patriarchy: The cultural politics of gender and family life in Egypt. Philadelphia: University of Pennsylvania Press.

Kadioglu, A.
1994 Women's subordination in Turkey: Is Islam really the villain? *Middle East Journal* 48: 640-662.

Lerner, G.
1986 The creation of patriarchy NY: Oxford University Press.

Lowie, R.
1920 Primitive Society NY: Boni & Liveright.

Mackey, W. C.
1985 Fathering behaviors: The dynamics of the man-child bond. NY: Plenum.
1996 The American father: Biocultural and developmental aspects. NY:

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Plenum.
Maine, H.S.
1873 [orig. 1861] Ancient Law: Its connection with the early history of society and its relations to modern ideas. NY: Holt.
Martin, P. & Widgren, J.
1996 International migration: A global challenge. *Population Bulletin* 5 6-17.
Marx K.
1904 [orig. 1859] The critique of political economy 1. N. Stone, trans. Chicago: International Library Publication Co.
McLuhan, M.
1964 Understanding media and the extension of man. NY: McGraw-Hill.
1967 The medium is the massage. NY: Random House
McLuhan, M.
1989 The global village: Transformations in world life and media in the 21st century. NY: Oxford U. Press.
Meghdesslan, S. R.
1980 The status of the Arab woman: A select bibliography. Westport, Conn.: Greenwood Press
Mernisse, F.
1991 The veil and the male elite: A feminist interpretation of women's rights in Islam. NY: Addison-Wesley
Morgan, L. H.
1963 [orig. 1877] Ancient Society. E. Leacock, ed. NY: Meridian Bks.
Morris, L.
1997 Globalization, migration and the nation state: The path to a post-national Europe? *British Journal of Sociology* 48: 192-209.
Murdock, G. P. & C. Provost
1973 Factors in the division of labor by sex: A cross-cultural analysis. *Ethnology* 12: 203-225.
Nag, M., B. White, & R C. Peet
1978 An anthropological approach to the study of the economic value of children in Java and Nepal. Current Anthropology 19: 293-306.
Nelson, B. J. & N Chowdbury
1994 Women & Politics Worldwide. London: Yale U. Press.
Obermeyer, C. M.
1995 A cross-cultural perspective on reproductive rights. *Human Rights Quarterly* 17: 366-381.
Raccagni, M.
1978 The modern Arab woman: A bibliography. London: Scarecrow Press.
Ross, E. B. & M. Harris

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

1987 Death, Sex, and fertility: Population regulation .in preindustrial and developing societies. NY: Columbia University Press.

Smith-Morris, M. (ed.)
1990 The Economist Book of Vital world statistics. NY: Times Books.

Statistisches Bundesamt
1992 Wirtschaft und statistik. Stuttgart: Metzler-Poeschel.

Steward. J.
1955 Theory of culture change. Urbana, Ill.: University of Illinois Press.

Toubia, H.
1988 Women of the Arab world: The coming challenge. London: Zed Books.

Tucker, J. E. (ed.)
1993 Arab women: Old boundaries, new frontiers. Bloomington, Indiana: Indiana University Press.

Tylor, E. B.
1958 [orig.1871] Primitive Culture. NY: Harper Torchbooks.

UNESCO
1994 Statistical Yearbook, NY: United Nations.

United Nations
1990 Demographic Yearbook. New York: United Nations.
1995 Demographic Yearbook 1993. New York: United Nations.

U.S. Bureau of the Census
1995 Statistical abstract of the United States: 1996 (116th ed.) Washington, D. C.: U. S. government Printing Office.

Walby, S.
1990 Theorizing patriarchy. Cambridge, Massachusetts: Basil Blackwell.

Weisner, T. S. & R. Gallimore
1977 My brother's keeper: Child and sibling caretaking. *Current Anthropology* 18: 169-190.

White, D., M. L., Burton, & L. A. Brudner
1977 Entailment theory and method: A cross-cultural analysis of the sexual division of labor. Behavior Science Research 12: 1 - 24.

White, D. R., M. L. Burton & M. M. Dow
1981 Sexual division of labor in African agriculture; A network autocorrelation analysis. *American Anthropologist* 83: 824-847.

White, L.
1959 The evolution of culture NY: McGraw-Hill.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

The Great Sex Divide

Glenn Wilson
Institute of Psychiatry, University of London

CONTENTS

SEX AND EVOLUTION
EVIDENCE FROM HUMAN BIOLOGY
EVIDENCE FROM ANIMAL AND OTHER CULTURES
CAN THE DIFFERENCES BE SUPPRESSED?
SEXUAL ANOMALIES AND DIFFICULTIES
TALENT AND ACHIEVEMENT
AGGRESSION AND CRIME
SOCIAL FORCES AND THE SEX WAR

The author examines the accumulated evidence for innate psychological differences between men and women, with direct relevance to current feminist philosophies.

ISBN 1-878465-04-X
Paperback, 160 pages
Bibliographical References and Index
Price: $20.00 VISA AND MASTERCARD ACCEPTED
TEL: (202) 371-2700 FAX: (202) 371-1523

Scott-Townsend Publishers
P.O. Box 34070, N.W. Washington, D.C. 20043

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Devolution by Revolution: Selective Genocide Ensuing from the French and Russian Revolutions

Robert K. Graham†[1]
Foundation for Human Advancement, Escondido, California

With the rise of social stratification, Humankind has developed "class warfare" to heavily dysgenic proportions. The author here provides historic examples of genocide which targetted the mor successful members of society. His examples are primarily drawn from the French and Russian revolutions.

Key Words: French revolution, Russian revolution, Marxism, genocide, dysgenics

Throughout the course of half a million years of hominid evolution there is evidence that our ancestors often killed or otherwise supplanted their rivals for control over resources necessary for survival and procreation. Since hominid intelligence rose dramatically during this period it can only be assumed that in general the more intelligent tended to survive in the struggle to survive and procreate.

If the mitochondrial DNA theory of human evolution is correct, the ancestors of the living varieties of man practiced a strict racist creed, supplanting these without interbreeding with them. However, whatever treatment was extended to other sub-species (and there is evidence that cannibalism may have been practiced as early as a quarter of a million year ago) it is generally assumed that with rise of in-group altruism, the members of the same human social group only seldom killed each other. In-group altruism promoted group survival, and groups which were less inclined to be supportive of their own members competed less effectively against rival populations, and in

[1] This article is published in respectful memory of its author, who unfortunately passed away before it could be published. It is here presented as a tribute to the memory of a selfless individual who regarded service to future generations as the highest duty, but who nevertheless benefitted his contemporaries by perfecting, amongst other accomplishments, a technique for rendering plastic lenses virtually scratchproof.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

the long run would be less likely to survive.[2]

In small inbreeding human groups, we might expect a heavily homogenized genetic pattern to have existed. Only when mankind progressed to the level of cultivating or advanced herding or fishing societies did the more successful groups expand and incorporated less successful populations, for agriculture made captive labor useful. Territorial expansion and the incorporation of less successful populations as serfs or slaves led to greater genetic diversity within territorial areas. This meant that the less competent and less intelligent populations were able to procreate under the protection of the more competent rather than be supplanted by them. More of the less competitive thus survived and reproduce alongside the more competitive, the rate of evolution effectively slowed down.

If this hypothesis is correct, it is reasonable to suspect that the rise of empires and slave-holding made possible by agricultural economies resulted in a significant modification of the reproductive patterns normally associated with the evolutionary process. A markedly greater proportion of the less competitive would have begun to survive and propagate. In primitive hunting societies, competition placed a survival value on intelligence, but in agricultural societies, the more intelligent could utilize the labor of the less intelligent to till the ground and harvest crops, and engage in the physical labor of erecting fine buildings designed by the more intelligent. The utility of cheap labor inclined the more intelligent to encourage the reproduction of the less intelligent and to protect them at the same time.

Today, technologically-advanced societies have fewer simple agricultural tasks to give to the less intelligent, and as technology advances more positions call for a higher level of intelligent. The complex and genetically heterogeneous modern Western societies face another problem. Not only have they for generations promoted the reproduction of the less intelligent, who in under evolutionary selective processes would have been less inclined to leave progeny

[2] Exceptions to this were societies which practiced selective infanticide. and these were less likely to survive unless such infanticide was eugenic, or in some way promoted the intergenerational survival of the group.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

behind them, but factors discouraging the reproductive activities of the more intelligent have emerged. The "liberation" of women from their traditional role of motherhood and child-rearing has enabled the more intelligent to devote their interests to professional careers, with the result that they marry late, if at all, and have fewer children. In addition, modern warfare tends to selectively eliminate the more intelligent males – and this at an early age, before they have reproduced. Formerly the more intelligent males had possibly a slightly better chance of surviving in war than the less intelligent. But modern warfare today selects the more intelligent and the younger to fill the most dangerous combat roles – as pilots and air-crews, as submariners, and as junior officers in combat units.

Yet another trend of an even more dramatic nature has surfaced in modern societies, this is the genocide of the more intelligent by the less intelligent – the latter often being led, it is true, by a small number of disaffected members of the intelligentsia. Violent revolutions, led by those whom Vilfredo Pareto called the speculator elite, have led to the mass slaughter of the more intelligent members of society in recent times. Whenever the proportion of less intelligent has become great enough, and the numbers of the ruling classes have been weakened by war, as in World War I, a potentially explosive situation is created. Where incendiary leaders arise[3] to ignite this explosive atmosphere, social detonation occurs. The masses are incited to turn upon the more successful members of their own society and slaughter them.

Here emerges a thing so tremendous in its impact that it of major dysgenic significance to the future of any nation in which violent revolution occurs. An examination of the phenomenon is gruesome, but it is essential to an understanding of the human situation, for mass revolutions – class wars – can match in deadliness the effects of

[3] Vilfredo Pareto's major contribution to social science was to show how intelligent persons who were not a part of any existing power elite tend to utilize the less competent masses to overthrow the existing elite. This can have very a strongly dysgenic impact upon any society when the established elite is actually exterminated violently.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

the most lethal international wars of all time.[4]

There have been numerous cases in recent centuries where the masses have been incited to kill their own successful kinsmen in the hope of seizing the possessions of their victims. In some cases they have also killed in order to remove galling evidences of their own relative inferiority. The more violent among them have felt impelled to obliterate all whom they feel to be superior in wealth, position, character, beauty or intellect. Of the intelligent, only the most radical revolutionary leaders have been exempted from obliteration in times of mass terror, and in some cases even these have fallen to the hatred of rival revolutionaries in the turmoil that inevitably follows the breakdown of any established society.[5]

A prime example of this vast internal genocide is to be found in the French Revolution, still often portrayed in positive terms as a "liberating" event. A similar genocide of the more successful also took place in places as diverse as Haiti, the U.S.S.R., Cambodia, and China. Of thee countries, Haiti, the U.S.S.R and Cambodia have still not succeeded in recovering from their loses. Historians have described the manifestations of this appalling aberration. Their words transmit in some measure the extent of the dysgenic trend inherent in most violent revolutions.

---

[4] "Total slain in the two deadliest wars in history:
Killed in World War I : 10,000,000[a]
Killed in Word War II: 17,000,000[b]
Total slain to 1962 in mass revolutions:
Killed by Communists in U.S.S.R., at least 10,000,000[c]
Killed by Communists in China, at least 30,000,000[d] [e]

[a] Sir Charles Darwin, *Problems of World Population* (Cambridge U. P., 1958), p. 25.

[b] Louis L. Snyder, *The War* (New York: Messner, 1960), p. 9

[c] Admitted by Stalin to Churchill. See Louis Snyder, *The World in the 20th Century* (Princeton: Van Nostrand, 1964) pp. 75-6.2

[d] Weyl & Possony, *Geography of Intellect, op. cit.*, p. 147.

[e] One of the latest and most comprehensive reports of this ongoing process states: "The approximate number of human beings killed as a direct outcome of the Russian revolution of 1917 and in the implementation of Communist policy is 83,500,000 (excluding World War II casualties)." *Intelligence Digest* No. 350, Jan. 1968.

[5] See Pitirim Sorokin, *The Sociology of Revolution*, for a penetrating analysis of the chaos that follows the breakdown of any established society.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

The Genocide of the Intelligent in Revolutionary France

The French Revolution (1789-94), and the revolution is Haiti which accompanied it, was the first modern instance of what occurs in a nation when a revolutionary segment succeeds in inciting the less successful mases to rebel against the established leaders. The circumstances of this revolution were not concealed behind iron or bamboo curtains, as were the Russian, Chinese and Cambodian revolutions of this century. Consequently, there is ample evidence available to those who wish to analyze it. Let me quote from a few who have documented that event:

> "The French Revolution ... revealed itself as different to any revolution that had hitherto been."[6] (Karl Marx referred to it approvingly as the first proletarian government in the history of the earth.)
>
> "A new and terrible thing has come into the world, an immense new sort of revolution whose toughest agents are the least literate and most vulgar classes, while they are incited and their laws written by (a few) intellectuals."[7]
>
> "The French Revolution was a universal insurrection of the lower orders against the higher .... The gifts of nature, destined to please or bless mankind, the splendor of genius, the powers of thought, the graces of beauty, were as fatal to their possessors as the adventitious advantages of fortune or the invidious distinctions of rank. 'Liberty and Equality' was the universal cry of the revolutionary party. Their liberty consisted in the general spoliation of the opulent classes; their equality in the destruction of all who outshone them in talent or exceeded them in acquirement."[8]
>
> "... the tyrants fell with peculiar severity upon all whose talents or descent distinguished them from the rest of mankind.... Lavoisier was cut off in the midst of his profound chemical researches; he pleaded in vain for a respite to complete a scientific discovery.

---

[6]Encyclopedia Britannica, 14th ed., Vol. 9, 1937, p. 804.

[7]Alexis de Tocqueville, *The European Revolution,* 1st ed., 1865 (Garden City: Doubleday Anchor edition, 1959), p. 161.

[8]Sir Archibald Alison, *History of Europe, Vol. I* (Edinburgh and London: Wm. Blackwood & Sons, 1849), p. 52.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Almost all the members of the French Academy were in jail...."[9]

"The combination of wicked men who thereafter governed France, is without parallel in the history of the world. Their power, based on the organized weight of the multitude... was irresistible. By them opulent cities were overturned; hundreds of thousands of deluded artisans reduced to beggary; agriculture, commerce, the arts destroyed ...."[10]

The rabble was encouraged to direct its fury against the educated and talented aristocracy, many of whose members were highly enlightened and had been aware of the need to ameliorate the economic well-being of the masses. The massacre began in Paris with the slaughter of aristocrats and priests:

"After the 10th of August, they had shut up ...relatives of émigrés, journalists, priests, aristocrats of all ranks....

"Towards 3 o'clock in the afternoon of September 2, 1792, the suspects who had been packed into the gaol heard a distant noise ascending the street.... A dense mob, clamorous, shouting, wildly excited, debouched from the Rue du Buci. On it came. The sight of the prisoners clinging to the bars of the prison drew from the populace a dreadful yell of fury. Ten thousand threatening fists were raised ... the slaughter lasted for fourteen hours. When the dawn broke after this terrible night ... the total number of the dead was 270.".[11]

In such fashion did the September Massacres begin.

"The butchery went on at the other prisons on the following days.... The murderers became so intoxicated with slaughter that common-law and political prisoners, women and children, were slain indiscriminately. Some of the bodies ... were horribly mutilated. There are different estimates of the numbers of the slain, varying

---

[9]Ibid., Vol. III, pp 302-303.

[10]Ibid., Vol. III, pp 245-246.

[11]Louis Leon Theodore Gosselin, *Paris in the Revolution* (New York: Brentano's, 1925), pp. 111-12.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

from 1,100 to 1,400. The populace looked on indifferently or with satisfaction at these scenes of horror."[12]

The Terror in Paris

The historian Higgins reports Marat, who claimed to be "the Friend of the People" as shouting: "Give me 300,000 heads; hang above their doors all merchants, bakers and grocers and I will guarantee that the country is saved..."[13]

Gaxotte writes that:

> "... the movement sprang from the communistic preaching of Jacques Roux and his rivals, Varlet and Leclercq. It was they who launched the idea that the political revolution ought to be completed by a social revolution, and that equality of civil rights would be useless without equality of fortunes.... Communism had won the victory, and ... the tendency towards the Left had not stopped short at the 'bourgeois' Revolution, but went the length of a 'proletarian' Revolution .... the situation was clear.... The object was to exterminate three hundred thousand families in order to seize their property .... It was the dregs that governed the country, ...as Taine says ...'Social outcasts and perverts of every sort and description, subordinates full of hate and envy ... by far the greater number were very beasts of prey, who ... adopted the revolutionary faith only because it offered them means to sate their appetites.'"[14]

Mathiez states that the period 1793-1794 marked the height of the Terror:

> "the prisons filled faster than they were emptied. Batch after batch was sent to the guillotine in rapid succession.... Heads fell like slates from a roof; thirty-one ex-judges of Paris and Toulouse who had once protested against the abolition of the parlements; ...

---

[12]Albert Mathiez, *The French Revolution* (New York: Russell, 1956), pp. 181-84.

[13]Quoted by Higgins, *French Revolution, op. cit.*, p. 248.

[14]Pierre Gaxotte, *The French Revolution,* Chapter 12: "The Communist Terror" (New York: Scribner's, 1932), pp. 290-317.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Lavoisier and twenty-eight farmers-general ...."[15]

"Eight thousand prisoners were soon accumulated in the different places of confinement in Paris; the number throughout France exceeded two hundred thousand.[16] ... From the furthest extremities of France crowds of prisoners daily arrived at the gates of the Conciergerie, which successively sent forth its bands of victims to the scaffold. Grey hairs and youthful forms, countenances blooming with health, and faces worn with suffering, beauty and talent, rank and virtue, were indiscriminately rolled together to the fatal doors.... Sixty persons often arrived in a day, and as many were on the following morning sent out to execution. Night and day the cars incessantly discharged victims into the prison.

"... when the fall of Robespierre put a stop to the murders, arrangements had been made for increasing the daily number to one hundred and fifty. An immense aqueduct, to remove the gore, had been dug from the Seine as far as the Place St. Antoine where latterly the executions took place."[17]

"Thus, in that frightful delirium which had rendered genius and virtue and courage suspect, all that was most noble and most generous in France was perishing either by suicide or by the blade of the executioner."[18]

"All the distinguished persons confined in the prisons had fallen; ... and death was already descending from the upper to the lower classes of society. We find at this period on the list of the revolutionary tribunal, tailors, shoemakers, hairdressers, butchers, farmers, publicans, nay, even labouring men, condemned for sentiments and language held to be counter-revolutionary."[19]

The Terror Spreads Throughout France

"The whole of the country seemed one vast conflagration of revolt and vengeance. The shrieks of death were blended with the

---

[15]Mathiez, *The French Revolution, op. cit.*, p. 499.

[16]Alison, *History of Europe,* Vol. III, *op. cit.*, pp. 262, 265.

[17]Ibid., pp. 265-66.

[18]Louis Adolphe Thiers, *The History of the French Revolution* Vol. III (Philadelphia: J. B. Lippincott Co., 1894), p. 223.

[19]Ibid., p. 451.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

yell of the assassin and the laughter of buffoons.... Whole families were led to the scaffold for no other crime than their relationship; sisters for shedding tears over the death of their brothers ... wives for lamenting the fate of their husbands"[20]

"'The miserable wretches [at Nantes,] were either slain with poniards in the prisons, or carried out in a vessel, and drowned by wholesale in the Loire. On one occasion, a hundred 'fanatical priests' ... were taken out together, stripped of their clothes, and precipitated into the waves.... Women big with child, children eight, nine, and ten years of age, were thrown together into the stream, on the sides of which, men, armed with sabres, were placed to cut them down, if the waves should throw them undrowned on the shore....' So great was the multitude of captives who were brought in on all sides, that the executioners declared themselves exhausted with fatigue .... It was ascertained by authentic documents that six hundred children perished .... To every representation of the citizens in favor of these innocent victims, Carrier answered, 'They are all vipers; let them be stifled.' Three hundred young women of Nantes were drowned by him in one night....

"Fifteen thousand persons perished at Nantes under the hands of the executioner, or of diseases in prison, in one month. The total number of victims of the Reign of Terror in that town exceeded thirty thousand!"[21]

"On October 12 ... the [Lyons] Convention passed the following motion: ... 'Every house inhabited by the rich shall be demolished.' ...'Collot organized a great ... celebration, ... and mass executions began...[22]

Alison reports that:

"... Many women watched for the hour when their husbands were to pass to execution, precipitated themselves upon the chariot, and voluntarily suffered death by their side. Deeming the daily

---

[20]Thiers, *The History of the French Revolution, op. cit.,* p. 223 Footnote quoted from Wm. Hazlitt, *Life of Napoleon Buonaparte*, Vol. I (New York: Wiley & Putnam, 1847), pp. 184-5.

[21]Ibid., pp. 533-34.

[22]Mathiez, *The French Revolution, op. cit.,* pp. 400-401.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

execution of thirty or forty persons too tardy ..., Collot-d'Herbois prepared a new and simultaneous mode of punishment. Sixty-four captives of both sexes, were led out at once, tightly bound together, to the Place du Brotteaux; they were arranged in two files, with a deep ditch on each side, which was to be their place of sepulchure ... At the extremity of the file, two cannon, loaded with grape were so placed as to enfilade the line ... the signal was given, and the guns were discharged.... Broken limbs, torn off by the shot, were scattered in every direction .... A second and third discharge were insufficient to complete the work of destruction, till at length the gendarmerie, unable to witness such protracted sufferings, rushed in and dispatched the survivors with their sabres.... On the following day this bloody scene was renewed on a still greater scale. Two hundred and nine captives ... were brought before the Revolutionary judges to be executed together ... With such precipitance was the affair conducted, that two commissaries of the prison were led out along with their captives; their cries, their protestations, were alike disregarded...." The numbers who survived the discharge rendered the work of destruction a most laborious operation, and several were still breathing on the following day, when their bodies were mingled with quicklime, and cast into a common grave."[23]

"... [in Arras] the representative Joseph Lebon ... placed on the official blacklists all tax-payers assessed at more than 50 francs. '... among those accused of crimes against the Republic,' he said, 'it is mainly essential to cut off the heads of the rich ... the criminal tribunal established at Arras will first pass revolutionary judgment on those of the accused who are distinguished by their talents or wealth....'"[24]

"In the city of Arras above two thousand persons ... perished by the guillotine.... Mingling treachery and seduction with sanguinary oppression, [Lebon] turned the despotic powers with which he was invested into the means of individual gratification. After having disgraced the wife of a nobleman, who yielded to his embraces in

[23]Alison, *History of Europe, Vol.* III, *op. cit.,* pp. 101-12.
[24]Gaxotte, *The French Revolution, op. cit.,* pp. 310-11.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

order to save her husband's life, he put the man to death before the eyes of his devoted consort."[25]

"The Dijon Commission had 4,000 Vendeans shot.... They were buried in the quarries of Miseri beneath a thin layer of earth and the stench of the charnel-house was wafted down to the city, which it terrified. It was then that a tardy reaction towards pity took place."[26]

Eventually the Revolution turned against its own "elite":

"Robespierre transported the guillotine ... to an open space near the Barriere du Trone. There it stood little more than six busy weeks, in which it dispatched fourteen hundred and three victims! It was finally conveyed for Robespierre's own use – to its original position, in order that he and his friends might die on the scene of their most remarkable triumphs."[27]

"Robespierre and 21 of his accomplices were sent to the guillotine on the 28th of July. On the 29th, 70 members of the Commune were beheaded, and 12 more on the 30th.... The Communist Revolution was dead."[28]

"... A merciless sword had ... [destroyed] alike the dignity of rank, the splendor of talent, and graces of beauty. All that excelled the labouring classes in situation, fortune, or acquirement, had been removed ... And what was the consequence? The establishment of a more cruel and revolting tyranny than any which mankind had yet witnessed; the destruction of all the charities and enjoyments of life; the dreadful spectacle of streams of blood flowing through every part of France...."[29]

---

[25]Alison, *History of Europe,* Vol. III, *op. cit.*, p. 101.

[26]Mathiez, *The French Revolution, op. cit.*, p. 403.

[27]Thiers, *History of French Revolution, Vol.* III, *op. cit.*, p. 450 Footnote quoted from *Quarterly Review.*

[28]Gaxotte, *The French Revolution, op. cit.*, p. 347.

[29]Ibid.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

"The population of France at this period was approximately 25 million. The historian Prudhomme estimates that the total victims exceeded one million persons".[30]

"The active part of the bloody faction at Paris never exceeded a few thousand men; their talents were by no means of the highest order ... yet they trampled under foot all the influential classes ... and daily led out several ... thousand persons, of the best blood in France, to execution."[31]

"The ruling principle ... was to destroy the whole aristocracy both of rank and talent ... the mass of the people ardently supported a government which was rapidly destroying everything which was above them in station or superior in ability.[32]

Dysgenic Achievements of the Russian Bolsheviks

In the French Revolution only a million or so people were killed, alhough Napoleon in his subsequent efforts to carry revolution to the rest of Europe probably inflicted equally dysgenic destruction on the French stock. Yet all this was but a small-scale preview of the enormous revolutionary excesses imposed on the Russian population during the first half of the present century.

As with the nations of Western Europe, Czarist Russia suffered massive genetic losses as a result of the madness of World War I. But, weakened by this war, the leadeship element in Russia was almost completely eliminated during and following the Bolshevik revolution which was made possible as a result of the genetic and eeconomic exhaustion resulting from participation in that vast internecine war which was in effect signalled the death of Europe. The Boshevik revolution established the "dictatorship of the proletariat" over the entire extent of the Czarist Empire, and led to massacres of the more talented on a scale so vast as to exceed in deadliness all other human slaughterings which Europe had ever suffered;

---

[30]Thiers, *History of the French Revolution,* Vol. III, *op. cit.,* pp. 474-75.
[31]Alison, *History of Europe,* Vol. III, *op. cit.,* 357-8.
[32]Alison, *History of Europe,* Vol. III, *op. cit.,* p. 300.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

> "... communism ... has destroyed ... more human beings than any force since the dawn of time."[33]

Highly organized warfare between cities existed as early as Sumer, with the subsequent Assyrians establishing their ascendancy by massacring all who attempted to resist them but failed. But this was warfare between different peoples and different nations or groups of allied nations. Warfare between classes developed only when those with mediocre mentality could survive and multiply, generation after generation, until they reached such overwhelming preponderance that they could war upon the classes above them.

> "Marxism ... rejects the concept of the united people in favor of class struggle."[34]

Lenin himself boasted that:

> "The Soviet regime ... is the first in the world (or strictly speaking, the second, because the Commune of Paris attempted to do the same thing) to attract the masses...."[35]

> "Contempt for death must spread among the masses and thus secure victory ... the ruthless extermination of the enemy will be their task...."[36]

J. Edgar Hoover, on the other hand, observed that it was "the ignorant primarily, but also the vicious, criminal element, which in Russia has murdered all who stood in their way and has robbed all

---

[33] U.S. House of Representatives, 86th Congress, Committee on Un-American Activities, Jan. 13, 1960, in *Lest We Forget!* (Washington, D.C: U.S. Government Printing Office), p. 1.

[34]Benjamin Schwartz, "The Intelligentsia in Communist China," *Daedalus,* Summer, 1960, p. 608.

[35]V. I. Lenin, "The Proletarian Revolution and Kautsky," *Handbook of Marxism,* 1919, p. 828.

[36]V. I. Lenin, quoted by J. Edgar Hoover, *Masters of Deceit* (New York: Holt, 1958), p. 35.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

who had any wealth ...."[37]

"... 'we kill whole classes,' cried Grigory Zinoviev, party head of Petrograd."[38]

"We are not warring against individual bourgeois. We are out to destroy the bourgeoisie as a class. Hence, whenever a bourgeois is under examination the first step should be, not to endeavour to discover ... proof that the accused has opposed the Soviet Government, whether verbally or actually, but to put to the witness the three questions: 'To what class does the accused belong?' 'What is his origin?' and 'Describe his upbringing, education, and profession.' Solely in accordance with the answers to these three questions should his fate be decided. For this is what 'Red Terror' means, ..."[39]

"... the Russians had liquidated the middle class and had banned all freedom of private enterprise, not only for capitalists but also for trades-unions."[40]

"The true story of that period will probably never be told in detail. For except for those who escaped to other lands, and they were relatively few, practically the whole upper and middle classes of Russia have been completely exterminated."[41]

"It is when we reach the Bolshevik Revolution of October, 1917, that a new chapter in the history of internal dysgenic catastrophe opens. Communist doctrine demands the liquidation of the ruling class in toto and this doctrine was applied with systematic thoroughness.... The second phase was to decimate, through the Bolshevik purges of all rival revolutionary parties, that substantial

---

[37] J. Edgar Hoover, *On Communism* (New York: Random House, 1969), pp. 78, 114.

[38] W. G. Miller, H. L. Roberts, and M. D. Shulman, *The Meaning of Communism* (Morristown, N. J.: Silver Burdette. 1963) p. 71.

[39] Latzis, quoted by Sergey Petrovich Melgounov. *The Red Terror in Russia* (London: J. M. Dent 1926). PP. 39-40. 138.

[40] Toynbee, A *Study of History,* Vol. II, *op. cit.,* p. 339.

[41] Wendell L. Willkie, *One World* (New York: Simon & Schuster, 1943), pp. 52-3.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

portion of the Russian intelligentsia which had supported the overthrow of czarism. The third phase was the Stalinist slaughter of most of the intellectuals who were Bolsheviks."[42]

"Virtually the entire Russian Intelligentsia was crushed by the proletarian dictatorship.[43] In 1923, the renowned Ivan Pavlov wrote to Stalin: "You are depraving and annihilating the intelligentsia to such an extent that I am ashamed to be called a Russian."[44]

" ... Stalin's ... brutal crimes against the 'class enemy' – the (farm-owning) peasantry and the intelligentsia...."[45]

"... Bolshevism, descending in these last years on Russia, has nearly wiped out her finest people and her best intellect."[46]

"Under Communism, the war against intelligence assumes the form of persecution and physical destruction of the upper classes and the intelligentsia."[47]

"Thousands of scholars, writers, teachers, state officials, even students, were arrested, deported or liquidated in jail.

Mass repression in the Caucasus in the 1930's led to the exile to Siberia or execution of approximately 422,000 people, drawn particularly from the intelligentsia...."[48]

"The State industrial enterprises, the municipal councils, the educational and scientific bodies – all lost their leaders by the hundred.

---

[42] Weyl and Possony, *The Geography of Intellect, op. cit.*, p. 147.

[43] Leo Pasvolsky, "The Intelligentsia Under the Soviets," *Atlantic Monthly,* Vol. 126, November, 1920, p. 692.

[44] W. Horsley Gantt, "Pavlov, Champion of the Truth," *Modern Medicine,* November 12, 1962, p. 338.

[45] Milovan Djilas, *Conversations With Stalin* (New York: Harcourt, 1962), p. 188.

[46] J. H. Curle, *Our Testing Time* (New York: Doran, 1926), p. 80.

[47] Weyl and Possony, *The Geography of Intellect, op. cit.*, p. 145.

[48] Intelligence Digest, Vol. 24, No. 279, February, 1962, pp. 14-15. 77 Conquest, *The Great Terror, op. cit.,* pp. 257, 317.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

"The Russian intelligentsia had for over a century been the traditional repository of the ideas of resistance to despotism and above all to thought control. It was natural that the Purge struck at it with particular force."[49]

"... the process of conquest by ... internal proletariats ... involves the extermination of a large part of the urban upper class and hence of the intellectual elite."[50]

"The deep ideological and political antagonism which, in the early period of the Soviet regime, divided Bolshevism and all the propertied and middle classes of old Russia applied particularly to the intelligentsia...."[51]

"The Soviet policy ... liquidates most of the creative minority...."[52]

The Communists slew or imprisoned those who were capable of independent thought, even when they had few material possessions, so as to silence possible opposition.

"Intelligentsia are judged 'enemies of the people' and are purged or liquidated."[53]

"The fate of the middle classes was shared by other elements of Russian society; by the nobility, gentry, capitalists, and 'intellectuals'. The tragedy of the intellectuals is a peculiarly poignant one. The Russian intellectuals, or Intelligentsia, as they called themselves, had for generations been Russia's brain and conscience. In the Intelligentsia were concentrated Russia's best hopes of progress and civilization. The Intelligentsia stood bravely

---

[49] Conquest, *The great Terror, op. cit.*, p. 139.

[50] Weyl and Possony, *The Geography of Intellect, op. cit.*, p. 85.

[51] Dallin, *The Real Soviet Russia, op. cit.*, p 139.

[52] Weyl and Possony, *The Geography of intellect, op. cit.*, p. xi. The number of Nobel scientists per 100 million of population is 175 in Switzerland, 5 in U.S.S.R., *op. cit.*, p. 142.

[53] Dr. Ellis A. Johnson (who directed the "Johns Hopkins Report on American Defense," 1956-58), U.S. *News*, Jan. 31, 1958, p. 50.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

> between despotic Czardom and benighted masses, striving to liberalize the one and to enlighten the other, accepting persecution and misunderstanding as part of its noble task ... the Intelligentsia was not of one mind. It had its conservatives, its liberals, its radicals, even its violent extremists – from which the brains of Nihilism and Bolshevism were drawn....
>
> "Then came the Bolshevik coup ... [the October revolution, 1917]. The result was a persecution of the intellectuals as implacable as the persecution of the bourgeoisie. The Russian intellectuals were killed, starved, and driven into exile. Multitudes perished, while the survivors were utterly broken...."[54]

Marx had referred to religion as "the opium of the people."[55] Expanding this theme, Lenin had written: "Religion is the opium of the people. Religion is a kind of spiritual vodka in which the slaves of capital drown their human shape and their claims to any decent human life."[56] In 1909 he wrote: "We must combat religion – that is the rudiment of all materialism and consequently of Marxism."[57] In 1918, having come into power, he ordered the Cheka to "put into effect a merciless terror against the kulaks, priests and White Guards."[58] In 1920 he wrote: "... it is necessary to fight against the clergy and other influential reactionary and medieval elements...."[59]

An intensified campaign of assault on religion began in January, 1928. "During the first Communist decade, a large proportion of the clergy of all faiths were wiped out along with other 'enemies of the regime.' Churches were confiscated,[60] schools taken over, the

---

[54] Stoddard, *The Revolt Against Civilization, op. cit.*, pp. 196-7.

[55] Communism in Action, p. 126. House Document No. 754, 79th Congress, 2nd Session (Washington, D.C.: U.S. Government Printing Office, 1946).

[56] V. I. Lenin, "Socialism and Religion," *Selected Works,* Vol. XI (New York: International Publishers, 1943), p. 658. Also: *Soviet World Outlook, op. cit.*, p. 77.

[57] V. I. Lenin, "Attitude of Workers' Party," *ibid.*, p. 666.

[58] *Facts on Communism,* Vol. II, House Document No. 139 (Washington, D.C.: U.S. Government Printing Office, 1961), p. 87.

[59] V. I. Lenin, "Preliminary Theses ...," *Selected Works, op. cit.*, p. 236. And *Soviet World Outlook, op. cit.*, p. 72.

[60] "The state confiscated all church buildings and property." *Communism in Action, op. cit.*, p. 217.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

religious press shut down and all religious teaching of the young prohibited.

> "Now as the war against the [landowning] peasants gained momentum, the attacks on the Church multiplied. The persecution of all religions in Russia and later in the satellites constitutes a catalog of thousands of crimes."[61]

> "Have we suppressed the reactionary clergy? Yes, we have. The unfortunate thing is that it has not been completely liquidated... the complete liquidation of the reactionary clergy must be brought about."[62]

Religion proved difficult to exterminate. In 1937 a third wave of religious persecution struck.[63]

> "By order of Lenin the All-Russia Extraordinary Committee for the Suppression of Counterrevolution, generally known as VCHK, was established. At the beginning of 1918 this committee started a reign of terror against the clergy as well as other representatives of the old regime.... Many outstanding bishops, priests and other clergymen were murdered.... Assassinations were carried out by order of the VCHK or its local agencies, by decisions of the revolutionary tribunals, by orders of local executive committees or commanders of the Red Army, or according to lynch law by soldiers, sailors or party activists who were roused by unbridled propaganda. In several towns and rural areas entire groups of ... clergy were shot."[64] "... the rolls of the clergy had fallen from 50,000 in Imperial Russia to 5,600."[65]

---

[61] Ibid.

[62] J. Stalin, *Leninism,* Vol. II (New York: International Publishers 1933), pp. 69-70. Also *Soviet World Outlook, op. cit.,* p. 78.

[63] See Dallin, *The Real Soviet Russia, op. cit.*, p 70.

[64] The Church and State Under Communism, Vol. I, Pt. 2 and 3, p. 27, Law Library, Library of Congress. Committee on the Judiciary, United States Senate, 89th Congress, 1st Session, 1965.

[65] *Ibid.*, p. 44. Quoting from Constantin de Grunwall, *The Churches and the Soviet Union* (New York: Macmillan, 1962), p. 57.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Another category of the intelligent which was intensively killed off was the military officers:

> "... In June ('37) reverberated the thunderbolt which decapitated the General Staff and struck terror into the country: under the unheard-of charge of espionage, under the ridiculous pretext of having 'violated their military oath, betrayed their country, betrayed the peoples of the U.S.S.R., betrayed the Red Army,' Marshal Tukhachevsky, Generals Yakir, Kork, Uborevich, Eideman, Feldman, Primakov and Putna, all well-known 'heroes of the Civil War,' all several times decorated with the order of the Red Flag, all classed as adversaries of Trotsky and partisans of Stalin, were tried in camera, condemned to death without witnesses or defense, and executed within forty-eight hours."[66]

> "The military purge lasted until the following year. When it finally was over, the majority of the Soviet marshals, generals, and colonels and approximately 30,000 officers of lower rank had been killed."[67] "... 90% of all generals, 80% of the colonels, and 30,000 other officers were killed...."[68]

The initial Russian communist practice, carried out for many years after they seized power in 1917, was to slaughter all classes but the propertyless portion of the laboring class and their communist leaders. This led to the flight abroad of millions of the intelligent in the early years before the Iron Curtain became so effective. "Such an exodus of the educated and the intelligent as there has been out of Russia no country has ever seen, ..."[69]

When, of the remaining middle and upper classes, enough millions had been slain to eradicate serious opposition, outright slaughter was abated somewhat. Instead, millions of the remainder were put into slave labor camps "to die usefully."[70] Later, as

---

[66] Boris Souvarine, *Stalin* (Toronto: Longmans, 1939), p. 269.
[67] Hoover, A *Study of Communism, op. cit.*, p. 106.
[68] Richard M. Ketchum, ed., *What Is Communism?* (New York: Dutton, 1963), p. 57.
[69] Pasvolsky, "The Intelligentsia Under the Soviets," *op. cit.*, p. 692.
[70] A Stalinist expression.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

international competition intensified, the communists realized their need for men of intelligence. By then they had some who were young enough to have been reared under communism, with relatively "safe" minds.[71]

There were intensifications in the war against the intelligentsia, and there were relaxations of the war – especially when the intelligentsia were needed in foreign wars or in five-year programs – but they remained through it all outside the pale of workers and peasants. They will always remain so, being suffered only if the need for them exceeds the hatred of them.

Periodically excepted in the war against the intelligent were the scientists.

> "Following the revolution in 1917, the Soviet authorities were quick to grasp the significance of the scientific community to the nation and provided extensive funds for resumption of the basic research effort. The scientists again became an elite group. Unfortunately, however, they were not exclusive enough to escape the purge that spread throughout Russia in 1929, and many prominent scholars were exiled or disappeared.[72]

> "When the purge subsided during the late 1930's, emphasis was again placed on practical research that could be applied to strengthening the military might, and this effort paid off in the early years of World War II."[73]

> "The political vacillations of the regime with respect to the intelligentsia continued with remarkable regularity, but the basic attitude was one of distrust. Neither the restoration of industry in the 'twenties, accomplished with the aid of the technological intelligentsia, nor the expansion of scientific institutes and other

---

[71] "The caste system of Tsarist Russia had not permitted the intelligent to rise to any level for which they could qualify, as currently in France and the United States. Accordingly, there were more genes for intelligence buried in the Russian masses than in the masses of some other countries. These were the chief source of bright young people in Communist Russia." Comment of Hermann J. Muller in typescript of *Man.*

[72] James W. Useller, *Ordnance,* Vol. 43, Sept.-Oct., 1958, p. 242.

[73] Ibid., p. 243.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

institutions – nothing could convert the intelligentsia to active support of Communism. Some intellectuals to be sure eventually found their way into the Communist party, but this fact only increased the regime's distrust of the rest.

At other times the Russian communists were reported to reward the remaining intelligent and competent people who accepted their orders. However, our chief concern here is not socio-economic systems but biological effects.

> "The Communists, operating with total disregard of genetics, exterminated upper classes for political reasons and used such devices as collectivization and man-made famines to obliterate individuals with more than average initiative and brains.
>
> If we consider the matter with cold objectivity, it becomes plain that, to the extent that Soviet power and Communist revolution spread, dysgenic deterioration and catastrophe will radiate outward .... The conscious purpose and final upshot of these processes of physical extermination of the elite will be to stabilize and equalize human intelligence at a level so low that Homo sapiens will no longer be capable of functioning in a social order based on individual initiative and personal freedom."[74]

The Katyn Woods massacre of thousands of Polish military officers and senior officials after the Red Army had marched into Poland in 1945 is a later example of the continuation of the deliberately dysgenic policy of the Communist powers, seeking to eliminate the "upper class" by way of selective genocide.

> "The extent of this genetic havoc is masked by other processes, operating in the opposite direction. The development of mass education under the Soviets and the creation of enormous employment opportunities for scientists, technologists, executives and professionals of all sorts developed abilities which had lain dormant. The transformation of any nation from an agricultural to an industrial, and hence from a rural to an urban one, multiplies

[74] Ibid., p. 149.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

educational and job opportunities for top and middle-echelon intellectual elites. This transformation is not specifically Russian or Communist. It occurred equally dramatically in Japan."[75]

Summary

These grisly examples of the deliberate extermination, by the masses and their masters, of the other classes *including most of the intelligent of their very own people* reveal a type of treacherous savagery not otherwise seen in man. Here is an unprecedented evolutionary phenomenon in which intelligence – the quality which enabled man to prevail throughout the earth – now tends to lead to the extermination of its possessors instead of to their survival and further procreation. The nations of eastern Europe, finally freed from Communist dictatorship, are experiencing great difficulty in benefitting from their new found degree of relative freedom, partly perhaps because they are unaccustomed to free enterprise, but also very probably because the severe dysgenic losses which they suffered during the period of violent Marxist upheaval.

Cuba is an even more recent example: "In Communist Cuba, the same or similar processes are occurring in microcosm. The only difference was that in this case many of the more capable were able to escape to the United States: "The intellectuals have, for the most part, been driven into exile, imprisoned or shot...."[76]

In short, humanity is facing a genetic crisis. Not only have wars selectively weakened the genetic heritage of the West, selectively eliminating pilots, aircrew, army officers and naval mariners often before they could reproduce, but artificial selection by violent revolution has levelled all nations that have experienced it downward to lower levels of competence; working almost exactly contrary to natural selection. China alone seems outwardly to have survived the genetic depredations of its more talented classes, but it is impossible to determine how much greater the future of China might have been but for the massive slaughters conducted in that country under the name of Communism over the past fifty years.

---

[75] Ibid., pp. 242-43.

[76] Weyl and Possony, *The Geography of Intellect, op. cit.*, p. 147.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

If such violent revolutions reoccur periodically in the modern world, such slaughterings of the more successful, who can reasonably be supposed to include a high proportion of the more intelligent, might well incline humanity toward a more primitive, more brutish level of evolutionary achievement.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Man
Between Past and Future

BRUNETTO CHIARELLI
University of Florence, Italy

CONTENTS

PRIMATE EVOLUTION AND PALEONTOLOGICAL EVIDENCE CONCERNING THE DISPERSAL OF HOMINOIDS

THE FIVE ECOGEOGRAPHIC SUBSPECIES AND THEIR POPULATIONS

CLIMATE, NUTRITION, IMMUNOLOGICAL RESPONSES, FOOD HABITS AND INTELLIGENCE

THE CURRENT HUMAN POPULATION EXPLOSION

THE NEED FOR GLOBAL BIOETHICS

ISBN: 0-941694-34-8
160 Pages, Illustrated, $20.00
Add $2.00 (U.S.) or $2.50 (Foreign) Post and Handling
MASTERCARD/VISA ORDERS ACCEPTED

Institute for the Study of Man
1133 13th St. NW, Suite C-2
Washington, D.C. 20005
Tel: (202) 371-2700 Fax: (202) 371-1523

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

The Case *for* Cloning

J. W. Jamieson
Institute for the Study of Man

With advances in medical research it would now seem possible to apply cloning techniques to human beings, and C. Richard Seed of Chicago has announced his intention of proceeding with a pilot scheme to implant embryos containing the genes of donor adults into the wombs of surrogate mothers. Because human reproduction has in the past involved a constant intergenerational reassortment of genes, public opinion has been encouraged to react against voluntary reproduction by means of cloning on the ground that this would produce exact replicas of living individuals. The validity of this and other objections is discussed in this article, and it is pointed out that such objections also constitute an affront against the dignity of identical twins. A more serious consideration involves the possible reduction of necessary diversity in the gene pool of a population, but this is rejected as irrelevant considering the size of most contemporary human breeding populations, compared with the very small size of hominid demes throughout the major part of human evolutionary history.

KEY WORDS: Cloning, bioethics, identical twins, birth control, positive eugenics, intelligence.

Following the successful British cloning of Dolly, the sheep, and further achievements in that direction, an agreement was signed by a substantial number of member nations of the Council of Europe in January 1998 which prohibited the cloning of human beings. This followed a call from the French President Jacques Chirac for an international ban on such procedures.

In order to "protect the dignity and identity of all human beings," the protocol legally bound the nineteen signatories to ban "any intervention seeking to create a human being genetically identical to another human being, whether living or dead", Daniel Tarschys, the Council's General Secretary, declared that "[I]t is important for Europe solemnly to declare its determination to defend human dignity against the abuse of scientific techniques."

The protocol stipulated that the signatory nations must enact laws that would punish those who violate its terms. The 40-member

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

council, established in 1949 "to promote democracy, human rights, and the rule of law," is not a constituent institution of the European Union, although most of the Union's members are included amongst its 40 member states. The text of the Convention is produced below:

ADDITIONAL PROTOCOL TO THE Convention for the Protection of Human Rights and Dignity of the Human Being with regard to the Application of Biology and Medicine, on the Prohibition of Cloning Human Beings

The member States of the Council of Europe, the other States and the European Community Signatories to this Additional Protocol to the Convention for the Protection of Human Rights and Dignity of the Human Being with regard to the Application of Biology and Medicine,

Noting scientific developments in the field of mammal cloning, particularly through embryo splitting and nuclear transfer;

Mindful of the progress that some cloning techniques themselves may bring to scientific knowledge and its medical application;

Considering that the cloning of human beings may become a technical possibility;

Having noted that embryo splitting may occur naturally and sometimes result in the birth of genetically identical twins;

Considering however that the instrumentalisation of human beings through the deliberate creation of genetically identical human beings is contrary to human dignity and thus constitutes a misuse of biology and medicine;

Considering also the serious difficulties of a medical, psychological and social nature that such a deliberate biomedical practice might imply for all the individuals involved;

Considering the purpose of the Convention on Human Rights and

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Biomedicine, in particular the principle mentioned in Article 1 aiming to protect the dignity and identity of all human beings,

Have agreed as follows:

Article 1

1 Any intervention seeking to create a human being genetically identical to another human being, whether living or dead, is prohibited.

2 For the purpose of this article, the term human being "genetically identical" to another human being means a human being sharing with another the same nuclear gene set.

Article 2

No derogation from the provisions of this Protocol shall be made under Article 26, paragraph 1, of the Convention.

Article 3

As between the Parties, the provisions of Articles 1 and 2 of this Protocol shall be regarded as additional articles to the Convention and all the provisions of the Convention shall apply accordingly.

Article 4

This Protocol shall be open for signature by Signatories to the Convention. It is subject to ratification, acceptance or approval. A Signatory may not ratify, accept or approve this Protocol unless it has previously or simultaneously ratified, accepted or approved the Convention. Instruments of ratification, acceptance or approval shall be deposited with the Secretary General of the Council of Europe.

Article 5

1 This Protocol shall enter into force on the first day of the month

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

following the expiration of a period of three months after the date on which five States, including at least four member States of the Council of Europe, have expressed their consent to be bound by the Protocol in accordance with the provisions of Article 4.

2 In respect of any Signatory which subsequently expresses its consent to be bound by it, the Protocol shall enter into force on the first day of the month following the expiration of a period of three months after the date of the deposit of the instrument of ratification, acceptance or approval.

Article 6

1 After the entry into force of this Protocol, any State which has acceded to the Convention may also accede to this Protocol.

2 Accession shall be effected by the deposit with the Secretary General of the Council of Europe of an instrument of accession which shall take effect on the first day of the month following the expiration of a period of three months after the date of its deposit.

Article 7

1 Any Party may at any time denounce this Protocol by means of a notification addressed to the Secretary General of the Council of Europe.

2 Such denunciation shall become effective on the first day of the month following the expiration of a period of three months after the date of receipt of such notification by the Secretary General.

Article 8

The Secretary General of the Council of Europe shall notify the member States of the Council of Europe, the European Community, any Signatory, any Party and any other State which has been invited to accede to the Convention of:

a any signature;

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

b the deposit of any instrument of ratification, acceptance, approval or accession;
c any date of entry into force of this Protocol in accordance with Articles 5 and 6;
d any other act, notification or communication relating to this Protocol.

In witness whereof the undersigned, being duly authorized thereto, have signed this Protocol.

Done at Paris, this twelfth day of January 1998, in English and in French, both texts being equally authentic, in a single copy which shall be deposited in the archives of the Council of Europe. The Secretary General of the Council of Europe shall transmit certified copies to each member State of the Council of Europe, to the non-member States which have participated in the elaboration of this Protocol, to any State invited to accede to the Convention and to the European Community.

The countries that signed in 1998 were Denmark, Estonia, Finland, France, Greece, Iceland, Italy, Latvia, Luxembourg, Macedonia, Moldova, Norway, Portugal, Romania, San Marino, Slovenia, Spain, Sweden, and Turkey. Britain refrained from signing only because it considered the restriction on research to be too severe, while Germany already had more severe restrictions in place. Both, however, have banned the cloning of human beings.

Citing a "national consensus" that human cloning is "morally unacceptable," President Clinton also expressed his support for a recommendation of the National Bioethics Commission (created in 1995) favoring legislation to effectively outlaw introduction of the new technique. But consensus does not necessarily signify unanimity, and the reason the Bioethics Commission deemed such a law necessary is that many scientists are anxious to work in the area. If they were not, there would be no need for legislation. If a country decides to restrict scientific activity in this area, there are in fact several legislative options: to ban all research into human cloning, to try to regulate future research, or third, to ban the actual production of human babies by cloning.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

The Arguments *Against* Human Cloning

If cloning research continues, it has been estimated that human cloning could become a practical reality within the next one to two decades at most. Some of the arguments in favor of banning cloning were listed in various articles published in the July 1997 issue of the *American Bar Association Journal.* These included the following:

1. The implication that nobody is entitled to do anything that they are not specifically entitled to do by law: "Nobody can claim that the right to clone is constitutionally protected as a fundamental liberty or privacy right" – Lori B. Andrews, professor of law at Chicago-Kent College of Law.

2. "Once we start down the path of research into human cloning, how do we limit how far we should go – it is a small step from genetic enhancement to eugenics, a pseudo-science aimed at improving the human race through selective reproduction. The nazis seized on these theories of racial superiority and extended them to the most fiendish ends" – Mark A. Rothstein, professor at the University of Houston Law Center.

3. "In the clone age there could be other physical replicas of myself running around" – R. Alto Charo, professor of law at the University of Wisconsin in Madison. A member of Clinton's National Bioethics Advisory Commission.

Other objections are parallel to those raised by Jeremy Rifkind against genetic manipulation of the human reproductive process in his 1998 book *The Biotech Century*. Although cloning in no way involves any human interference with the human germ line, these include:

4. The possible rise of genetic "discrimination" and the development of a moral attitude which favored the eugenic goal of directed-evolution aimed at producing a superior breed of human beings – seen by many as an *ipso facto* evil.

5. The possibility that the cloning of healthy individuals might de-stabilize the insurance business by causing individuals who are cloned from individuals with a good medical record to resent having to pay higher premiums to help cover the medical expenses likely to

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

be incurred by natural-born children whose medical future will be less predicable – especially where the latter were born to parents with disadvantaged medical histories.

6. The affront to religion by what some will perceive as human interference with God's monopolistic right to determine who should "give birth." This is a view shared by many Christian authorities of diverse persuasions. Thus Joel Shuman, speaking at Duke University Divinity School, declared that "engaging in cloning involves a kind of hubris that says humans are capable of determining their own destiny." For seemingly similar reasons, professor Ted Peters of the Pacific Lutheran Theological Seminary believes that "it is better to have a child born the old-fashioned way, *with the genetic code out of control of the parents*."

On the other hand, Rabbi Elliot Dorff, rector of the University of Judaism in Los Angeles, reports that Orthodox, Conservative and Reform Jews all agree that "cloning is a technology and as such is morally neutral," sagely observing that "[T]he question is what use you put it to."[1]

7. If private individuals are permitted the right to have themselves cloned this could potentially lead to an imbalance in numbers between males and females – just as the ability to determine the sex of a fetus threatens to do in some societies. [This, and similar imbalances of demographic significance, is a rather remote but potentially real possibility.]

8. Mass cloning could theoretically reduce the genetic variability in a population to the point that the survival of that population could be threatened by new diseases or other adverse conditions.

Against this last objection consideration should be given to the fact that cloning is already under consideration as a means of replenishing certain species that are threatened with extinction, and research in this direction will help us to assess the validity of this

[1] For the source of these quotations and further detailed commentary see "Human cloning's potential misuses and abuses," *The Christian Scice Monitor, August* 13, 1996.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

argument in respect of the human species. The importance of maintaining a degree of genetic variability within any species has been considered in this respect, but it has been pointed out that cheetahs have gone through such a narrow genetic bottleneck in the past that at one point there may have been only one or two breeding pairs alive. It is also observed that, on a less dramatic scale, genetic bottlenecks are a crucial component in evolution, and that our ancestral hominids constituted a very small population that lived under conditions of extremely close inbreeding – a condition that actually facilitated rapid selective evolution. Thus, in light of the enormous size of the world's current population, the magnitude of any reduction in genetic variability due to cloning would be in any conceivable circumstances not only insignificant, but if the clones were derived from essentially talented and healthy individuals, the effect on the human gene pool could only be beneficial.

Obviously, the most significant question which haunts us in respect of cloning is: who would decide who would be cloned? I do not intend to investigate this all-important issue here, since it is impossible to do anything more than speculate. One thing we may be sure about. Somebody somewhere *will* eventually start cloning human beings, whether this is done commercially in Third World countries on behalf of the very rich, or by the governments of totalitarian countries such as China.[2] Whether or not its impact will benefit the human gene pool will depend on the genetic qualities of the individuals who are cloned.

The Arguments *For* Cloning

If, as President Clinton claims, there is a "consensus" on the subject in favor of banning reproduction by cloning, there is still a minority opinion. What are the minority's arguments? On the ideational front, human ecology is a topic which refuses simply to "go

[2] To go out onto the fringe of imagination, one might ask whether, once cloning technology has been perfected, some benevolent democratic governments might even come to regard it as an entitlement to be funded by the state in the case of welfare recipients who cannot produce biological offspring. After all, in the U.S., the District of Columbia and several states, including Maryland, already fund the supply of Viagra to indigent males and fertility treatment for indigent females as a Medicaid entitlement.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

away," and half a century after the suppression of eugenic ideals throughout the Western world (but *not* in China), medical genetics is pushing questions of eugenics to the forefront once again and new treatises of eugenic interest are appearing with increasing frequency. It is a simple fact that human evolution (in the sense of genetic change, either eugenic *or* dysgenic) has not only *not* come to a halt, but is actually proceeding at a speed heretofore unknown. Birth control methods and modern social conditions have created an evolutionary mechanism which will have altered the genetic makeup of humankind in the time it takes to read this brief article – and it is irrational to believe that thinking individuals are unaware of this, no matter how studiously they may seek to avoid open discussion of the facts in the current intellectual climate.

The nature/nurture argument has basically been a holding tactic pursued, very effectively, by extreme egalitarians. There are only three possible positions which could be taken on the topic: is human behavior controlled by genes, environment, or both? All serious scientists now agree that human behavior is a product of both genes and environment. As for total genetic predisposition, this view has never been seriously argued, but the extreme environmentalists have managed to successfully maintain the opposite: that human individuals are a *tabula rasa,* a "clean slate" capable of accepting any text that the environment, cultural as well as physical, imprints on them.

During the first three quarters of this century, the deterministic worldview of nineteenth-century positivism ran into enormous emotional resistance, and our recent history has been dominated by a view of human nature that emphasized the software of the human brain (the environmental programming) over its hardware (its genetically determined structure). Freudianism, Marxism, radical feminism, Skinner's behaviorism, the anthropology of Franz Boas and Margaret Mead, and the theories advanced by academic criminologists all explained human behavior primarily in terms of environmental influences – while inherited traits were rejected as

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

invidious and offensive. *Race, Intelligence and Bias in Academe*[3] documents the vilification and harassment experienced by even highly reputed scholars who challenged egalitarian shibboleths. While genetic research is now forcing additional scholars to acknowledge the importance of heredity in human affairs, anti-hereditarian doctrines won such a secure hold over the public mind during the last five decades that "eugenics" and "dysgenics" are still regarded as four letter words by the editors of most publications. Accordingly, the idea of cloning healthy individuals, as compared with random breeding from even the most "genetically-challenged" members of society, has consequently likewise been met with predictably strong emotional resistance.

In the 19th century, Darwin's cousin, Sir Francis Galton, the founder eugenics as well as of statistical method, noted differential fertility patterns in the British population. Young people of ability were failing to reproduce at the same rate as the lesser achievers. His gloomy demographic projections are proving to be frighteningly accurate. As readers of the *Wall Street Journal* already know, 40% of births in today's America are now financed by Medicaid[4] while the members of America's intellectual elite devote their fertile years to graduate training, professional development and global junketing. Economists even explain fertility on the basis of a cost curve: one baby costs the equivalent of *X*-number of televisions, sports cars, condos, etc. Society suffers from a cruel contradiction: the more accurately it selects its future leaders for training and careers, the more effectively it deflects them from the essential task of species reproduction. Now it is the welfare population that serves as our breeding stock. This is a problem encountered across races, economic systems, and continents.

Galton's eugenics distinguished between negative and positive

---

[3] *Race, Intelligence and Bias in Academe*, Roger Pearson, Introduction by Hans J. Eysenck, Second edition, 1996, Scott-Townsend Publishers, Box 34070, Washington DC 20043.

[4] Anita Sharpe, "Cash on Delivery: How 'Medicaid Moms' Became a Hot Market for Health Industry: Doctors and Hospitals Chase Poor Pregnant Women and Fat Reimbursements: Free Blankets and Baby Seats," *Wall Street Journal*, May 1, 1997, A1, A6.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

eugenics. Negative eugenics called for a reduction in the fertility of persons suffering from low intelligence and physical defects that can be passed on to future generations. Cloning *could* operate as a form of positive eugenics, increasing the number of births of persons favored with good health and high intelligence. As such it could be used to compensate for the heavily dysgenic impact of present-day Western reproductive trends, especially the adverse selective impact of modern warfare which tends to eliminate a high percentage of combatants such as pilots and aircrew before they have had the opportunity to pass on their genes.

Here we might respond to the objection that it would demean humanity to have more than one copy of an individual living at the same time (though cloning does not necessarily imply that the clones should live contemporaneously). Clones are essentially the same as identical twins, except for their entering the world at different dates, and although in some primitive societies identical twins were regarded with such superstitious fear that the second was customarily killed, in our modern enlightened age we surely cannot say that identical twins are in some way less desirable than fraternal twins or other siblings. A certain amount of cloning would minimally increase the number of identical twins in society – hardly the horror it is made out to be by the sensation-hungry popular press. Humanity evolved as a result of thousands of generations of close inbreeding by very thinly-spread hominid populations; the threat posed by the multiplication which would result from cloning pales into comparison with the genetic history of humankind.

As of mid-1998, the global population had risen to 5.9 billion people. By simply glancing into any textbook on intelligence statistics, we can see that only one person in 10,000 has an IQ exceeding the mean by 3.7 standard deviations (which corresponds to an IQ of 155 in European populations). If we were to assume, for the sake of argument, that intelligence is equally distributed around the globe, this would mean that only 590,000 persons are in the range of 3.7 standard deviations above the global mean, whatever that may be. Consider also the dysgenic implications of the selective murder in World War II of pilots, aircrew, and similar talented front line combatants, usually while still too young to have fathered offspring, and the need to help replicate the more beneficial genes in the

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

European/global gene pool should be obvious. It is arguably to the more talented people that we owe the great breakthroughs in science, out of all proportion to their percentage in the global population. William Shockley, who helped make the modern computer possible, was one such individual – who was nevertheless castigated for interesting himself in the link between heredity and human intellectual achievement.[5]

Assuming for the purposes of demonstration, once again, that intelligence is evenly distributed around the globe, this year some 15,100 persons will be born with an IQ exceeding their *national* mean by 3.7 standard deviations. This is an insignificant figure in global terms, yet continued advances in science will demand an ongoing supply of persons of high intelligence in future generations. By way of comparison, the overall world population is increasing (births over deaths) by 1.6% per annum, or more than 9 million per year; and this increase is not necessarily occurring amongst the peoples of higher intelligence.

There is a long-standing discussion about the exact nature of intelligence involving such questions as whether there is a general g factor, or whether high IQ is a combination of exceptional talents in a number of areas. But the pro-cloning argument does not hinge on such questions. Even if IQ is simply a statistical mean score of unrelated talents which are individually heritable, then this statistical mean will itself be heritable in subsequent generations, and clones could be made of persons who possess the requisite qualities in their genotype.

Also, many would correctly argue that it is desirable to select not only for high IQ, but for a number of other characteristics. There are many largely heritable aspects of personality that are vital for the maintenance of civilization and the promotion of further scientific progress. These include the ability to focus on long-term goals and to suppress the temptation to be constantly diverted by irrelevant stimuli

[5] Shockley's work, including selections of his writings on the subject of heredity, is documented in *Shockley on Eugenics and Race,* Roger Pearson (introduction by Arthur Jensen), Scott-Townsend Publishers, Box 34070, Washington D.C. 20043).

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

or by the call for "instant gratification".[6] In addition to mental ability we need to cultivate health and a broad sense of altruism that embraces the well-being of future generations, not only of those alive today. Although personality qualities are to a varying extent the product of culture as well as of heredity, to the extent that heritability is a factor we are left dealing with the fact that many who exhibit the qualities we desire fail to have children, and on a statistical basis it is probable the better-endowed members of Western societies have failed to reproduce themselves at even replacement level over the past few generations.[7]

Modern society has largely blunted the pruning process of natural selection, but every generation still remains a genetic bottleneck. Only the genes that are passed on to the next generation can have any hope to being passed on to more distant generations. With the declining importance of natural selection in our contemporary socio-cultural environment the future of *Homo sapiens* today hinges on the fact that we can no longer rely on the more capable segments of the world community to shape the genetic quality of posterity; they can only do so if they are suitably prolific. To the extent that cloning might help maintain, or possibly even increase, the percentage of highly favorable genes in the gene pool of the next generation, it could help to prevent the reservoir of human talents from declining to the point at which humanity might eventually disappear – as T.S. Eliot would have put it – "not with a bang, but a whimper."

---

[6] See "Thalamic Inhibition in the Evolution of Human Intelligence: Evolutionary Pressure for Cortical Inhibition" by K.K. Glendenning, *The Mankind Quarterly*, Vol 38/4 No 4, Summer 1998).

[7] I am specifically thinking of the dysgenic effect of modern warfare, as well as of the disparate reproductive rate cited in the report of the post-World War II (British) Royal Commission on Population.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Ecology and Evolution

Editor: Roger Pearson, Ph.D.

Chap. 1. Ecology, Adaptation and Speciation
Roger Pearson

Chap. 2. Ecosystem and Genetic System
F. J. Irsigler

Chap. 3. Mammalian Societies and the Emergence of the Family System
J. W. Jamieson

Chap. 4. Understanding Human Evolution: Kinship *versus* Social Materialism
Roger Pearson

Chap. 5. Genetic Altruism: Some Hypotheses on Monogamy, Polygyny, Incest Taboo, Exogamy and the Origins of the Family
Umberto Melotti

Chap. 6. Ethics and the Social Sciences
Raymond B. Cattell

---

92 Pages – Extensive Bibliography – ISBN 0-941694-00-3
$15.00 (add $2.50 postage) M/C-Visa Accepted

Institute for the Study of Man
1133 13th St. NW., Suite C-2, Washington DC 20005
Tel: (202) 371-2700 Fax: (202) 371-1523

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

The "Flynn Effect": Does it Apply to Academic Achievement?

Ralph Scott, Hanna Bengston, and Ping Gao
University of Northern Iowa, Cedar Falls

Recent years have witnessed extensive interest in Flynn's research findings, which have been subsumed under the rubric "Flynn Effect" (FE). This research, conducted in 14 countries, has revealed a virtually invariable tendency for IQ scores to progressively increase. Therefore when an aptitude test was renormed, an examinee had to secure a higher raw score to keep pace with the earlier standard score. However, Flynn has questioned how aptitude can rise if people do not learn easier and if they fail to experience higher levels of occupational success. The present inquiry employed several versions of the Wide Range Achievement Test (WRAT) to assess whether the FE prevails when an achievement test is renormed. Results on the Arithmetic subtest affirmed the FE, whereas results on the Reading and Spelling subtests did not. Replication studies are suggested, to appraise the implications of Gc and Gf, as well as maturation, on longitudinal aptitude and achievement trends.

Key Words: IQ, The Flynn effect, Academic Achievment Directionality

Americans place great importance on education, and presently confront a puzzling inconsistency: how it is possible for longitudinal studies to report that U.S. students perform lower on academic achievement tests (Williams & Ceci, 1997), but obtain progressively higher IQ scores (Begley, 1996; Flynn, 1996; Loehlin, 1997; Hall, 1998)?

Long-term and upward trajectories of aptitude profiles have been documented by James R. Flynn, a political philosopher at the University of Otago, New Zealand. Flynn examined and assessed longitudinal aptitude test trends by decade in 14 nations (Flynn, 1984, 1987, 1996). Through a series of investigations, Flynn observed that every time an aptitude test was renormed, an examinee had to secure a higher raw score in order to keep pace with the standard score he/she had previously obtained (Kamphaus, 1993, p. 120): this

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

progressive rise in IQ over decades has been termed the Flynn Effect (FE). Should results of FE investigations prove accurate, they raise potentially significant social and political implications. Some studies indicate that IQ score increments are largely concentrated in the lower social economic groups (Jensen, 1998, pp 319-320). This reduced the standard deviation and may in effect mask a decline in scores of the middle and upper classes.

While widely cited, aptitude data supporting the FE are mysteriously erratic; the per-decade increment in standard scores ranged from less than two standard points in Great Britain to more than l2 standard score points in East Germany. Such an erratic range calls into question the validity of FE investigations. While accepting FE as a real phenomonon, Jensen 1998 p.319) notes that test profiles vary by test and time period, and that the variables across studies are "utterly confounded." In the 14 nations wherein data were gathered, IQ gains extended from 5 to 25 points in one generation (Flynn, 1987). A primary problem rests with the samplig issues. A large proportion of FE studies employ tests which are normed based on representative population at one point, and renormed many years later on a different but presumably similar population. For these studies, sample equivalences cannot be assumed (Jensen, 1998, p. 318). Still another proble with the FE involves practical significance. As Jensen notes, one correct item on the *Ravens Matrices* alone can increase a subject's score by two to three points. Significantly, a large proportion of FE studiee employed the *Ravens Matrices*.

Assuming that the FE is an authentic and empirically validated phenomenon, implications are unclear. Flynn has acknowledged difficulty in reconciling progressively higher IQs and the absence of a corresponding increase in the general population of what is considered practical intelligence. Thus he notes that more people do not find school easy, and occupational success has not been more apparent during the decades in which IQ increases have been documented (Flynn, 1987, p. 184).

The different longitudinal trajectories of IQ and scholastic achievement tests are indeed puzzling. Both IQ and achievement tests are generally seen as highly loaded on *g*, a large general factor which appears in virtually all cognitive assessments of human subjects. In assessing the different directionality of IQ and achievement scores

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

over time, Flynn (1996) has questioned the concept of *g*. How, he asks, can *g* be powerfully related to both IQ and achievement if longitudinal trends are so dissimilar one up and one down? Flynn has therefore called for the ravamping, if not the abandonment, of *g* as a central and often governing component of human intelligence.

The theoretical problems raised by Flynn may be explained by more closely examining the dynamics of IQ increments as reported in FE investigations. In reviewing his data, Flynn noted that about twice as much test variability was linked to measures heavily weighted in fluid intelligence or Gf than on tasks which emphasize crystallized intelligence or Gc. Here Gf is seen as affecting all types of problem solving, is related to physiological factors, and is highly influenced by genetic factors. Essentially nonverbal, Gf is considered relatively structure free, and heavily influenced by adaptive and learning of new information. Conversely, Gc is viewed as significantly related to what a person has specifically learned. Gc thus refers to acquired skills which are strongly dependent on developmental exposure to cultural and social influences and is more closely allied to achievement than to aptitude (Kamphaus, p. 26).

Further research may demonstrate that the FE becomes more comprehensible if the contributions of Gf and Gc are differentiated to partial out the impact of aptitude and achievement effects. Kaufman (1990) as well as Plomkin & DeFries (1998) suggest that such differentiation should assess the overlap of aptitude and achievement cognitive functions. This view conflicts with the perspective of Williams & Ceci (1997) who consider aptitude and achievement scores sufficiently similar to be used as "proxies" for each other. Should this latter view be validated, longitudinal assessments of achievement measures would therefore mirror a longitudinal upward bias similar in magnitude to the FE, which is based on studies of aptitude trends (Begley, 1996; Hall, 1998; Kaufman, 1990).

The researchers therefore sought to determine whether the FE has been tested through examination of scores obtained on different versions of the same achievement, rather than aptitude, test. Computer searches failed to yield a single study which examined applicability of the FE on achievement. The authors, therefore elected to address this issue. The present investigation examines

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

standardized scores secured by children on two versions of the popular standard achievement instrument the Wide Range Achievement Test (WRAT), as first revised in 1984 (WRAT R) and further revised in 1993 (WRAT 3). Should trendlines reported in FE investigations prevail, standard scores of the most recent WRAT 3 should be approximately three standard scores lower than WRAT R scores.

Method

Ss were administered Level I of the WRAT R and WRAT 3 versions of the WRAT: this level is normed for SS 12 years of age and younger. Both the WRAT R and WRAT 3 are designed to assess skills in three basic academic domains: Reading in the form of word recognition (oral pronunciation of single words or oral encoding), Spelling from dictation (written encoding), and Arithmetic computation. Test items are representative samples of the three academic areas; some were drawn from earlier WRAT editions, which date back to 1937. Technical data indicate that norming procedures controlled for the variables of age, geographic region, metropolitan-nonmetropolitan, race, and sex. Both instruments yield standard scores, with CA appropriate score means of 100 and standard deviations of 15. Reliability coefficients of both instruments, corrected for attenuation, range from the upper 80s to the mid 90s. Also, correlations are high between the WRAT 3 and the widely used aptitude test, the Wechsler Intelligence Scale for Children-III (WISC-III), but lower than between the WRAT R and WRAT 3. Correlations of the WRAT 3 Reading, Spelling, and Arithmetic subtests and the WISC III Full Scale IQ are .66, .66, and.73 respectively.

Ss were 31 fourth grade students who attended two regular classrooms of a university laboratory school (17 boys and 14 girls; CA 9 yrs 3 mts to 10 yrs 5 mts, mean CA 9 yrs and 10 mts). All Ss were Caucasian except for one Pakistani-American boy who spoke English fluently. The school is located in a community of 30,000 residents; special attendance inducements are provided for minority students who reside in a metropolitan area of 78,000 located 10 miles from the university campus. All testing was conducted by a female upperclass woman who majors in psychology. Data were gathered over a four

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Table 1

Means, Standard Deviations and Differences:
Female students' Standard Scores on the WRAT R and WRAT 3
N (14)

	WRAT R		WRAT 3		
	Mean	SD	Mean	**SD**	Difference
Reading	106.6	23.8	108.9	18.2	**2.3**
Arithmetic	110.7	12.5	108.7	8.2	**2.0**
Spelling	101.7	16.9	103.2	15.4	**(1.5)**

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Table 2
Means, Standard Deviations and Differences:
Male students' Standard Scores on the WRAT R and WRAT 3
N (17)

	WRAT R		*WRAT 3*			
	Mean	**SD**	**Mean**	**SD**	**Difference**	**Significance**
Reading	108.1	18.9	110.4	20.1	**(2.3)**	
Arithmetic	111.7	13.9	107.8	9.2	**3.9**	
Spelling	106.0	18.6	106.3	17.5	**(.3)**	

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Table 3
Means, Standard Deviations and Differences:
All Subjects Standard Scores on the WRAT R and WRAT 3
(N 31)

	WRAT R		*WRAT 3*		
	Mean	**SD**	**Mean**	**SD**	**Difference**
Reading	107.4	20.9	109.7	19.0	**(2.3)**
Arithmetic	111.3	13.0	108.2	8.6	**3.1**
Spelling	104.1	14.9	104.9	16.4	**(.8)**

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

week period. Because of logistical reasons, the order of test administrations was not counterbalanced. The WRAT R was always given first. During the first week, the examiner administered the WRAT R to members of one of the classrooms. The Spelling and Arithmetic subtests were group administered whereas the Reading subtest was individually given to students in a small private room, located close to the classroom. A week later identical procedures were employed in administering the WRAT 3 to members of the same class. Similar procedures were followed during the subsequent two week period, to members of the second class.

Results

Table l summarizes results for all female students, and shows that scores on the WRAT R were lower than the WRAT 3 attainments in Reading and Spelling, with standard score differences of 2.3, and 1.5 respectively. Conversely, Arithmetic standard scores on the WRAT-3 are 2.0 standard scores lower; these scores generally conform to the FE which assumes lower scores on the more recent version of a test. Further, and on both the WRAT-R and WRAT-3, standard deviations are significantly larger on the Reading than on the Arithmetic subtest. Parallel results appear on Table 2, which sketches results with male Ss. Here, WRAT R scores follow the pattern observed with females and are lower on the WRAT R in Reading and Spelling, but not Arithmetic.

Again significantly higher standard deviations occur on the Reading than on the Arithmetic measures. Table 3 shows that, for all Ss, WRAT R scores were lower than scores on the WRAT 3 in Reading and Spelling, but not Arithmetic. For all Ss, standard deviations are significantly higher on Reading than Arithmetic.

Discussion

Results of this assessment require cautious interpretation. The N is small, all Ss were drawn from the Midwest and were predominantly Caucasian, significant and puzzling differences appear in standard deviations on the three subtests which compose the WRAT, and practice effects may exist, since the WRAT R was always administered first. Nonetheless, the findings prompt several questions. In the current study, only in Arithmetic did Ss secure lower scores on

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

the more recent edition of the WRAT. The magnitude of Arithmetic gains is consistent with the FE formula of three standard scores per decade. However the converse appeared on the Reading and Spelling subtests, where higher scores appeared on the older revision of the WRAT.

It is unclear why the FE was affirmed in one academic domain, but denied in the other two. This seeming inconsistency may be reconciled by examining the Gc and Gf loadings of the respective subtests. Flynn (1996), Kaufman (1990) and Jensen consider the magnitude of the FE largely attributable to Gf cognitive functions. The FE thesis would receive affirmation if Arithmetic were heavily loaded in Gf, and if lower Gf loadings occurred in Reading and Spelling. But researchers disagree concerning the role of Gf in Arithmetic. Thus Kamphaus (1993, p.26) identifies Arithmetic as "an area of expertise" primarily linked to Gc. Conversely Sattler (1998, p.836) considers Arithmetic heavily weighted in Gf.

This apparent discrepancy may be reconciled by replication studies which examine achievement profile changes over decades within the context of maturation, as Flynn has advocated (1996). Further, and consistent with Flynn's proposals, Plomin & DeFries (1998) have documented the influence of aging on transformations of cognitive functions. Replicative investigations may reveal that the impact of maturation on loadings of Gc and Gf differ in the various achievement areas. Thus for 10 year old Ss, the loading on Arithmetic tasks may be far different than for 40 year olds. The role of maturation is underscored by evidence that Gf develops rapidly to about age 15, and then declines (Plomin & DeFries, 1998). Results of such research should add new dimensions to an understanding of how FE relates to longitudinal cognitive shifts in achievement and aptitude profiles.

References

Begley, S.
1996 The IQ Puzzle. *Newsweek*, May 6, 129 (18), 70-72.

Flynn, J. R.
1984 The mean IQ of Americans: Massive gains 1932 to 1978. *Psychological Bulletin*, 95, 29-51.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Flynn, J. R.
1987 Massive IQ gain in 14 nations: What IQ tests really measure. *Psychological Bulletin*, 101, 171-191.
Flynn, J. R.
1996 What environmental factors affect intelligence: The relevance of IQ gains over time. In D. K. Detterman (Ed.), *Current topics in human intelligence*, Volume 5: The environment (pp. 17-29). Norwood, NJ: Ablex.
Hall, Trish
1998 IQ scores are up, and psychologists wonder why. *New York Times*, February 24, p. F1.
Jensen, Arthur R.
1998 *The g Factor: The Science of Mental Ability*. Westport, CT: Praeger
Kamphaus, R.W.
1993 *Clinical Assessment of Children's Intelligence*. Boston: Allyn & Bacon.
Kaufman, A.S.
1990 *Assessing Adolescent and Adult Intelligence*. Boston: Allyn & Bacon.
Loehlin, J.C.
1997 Dysgenesis and IQ: What evidence is relevant? *American Psychologist*, 52 (11),1236-1239.
Plomin, R., & DeFries, J.
1998 The genetics of cognitive abilities and disabilities. *Scientific American*, 278 (5), 62-69.
Sattler, J.
1988 *Assessment of Children*. San Diego: Jerome Sattler.
Williams, W. M., & Ceci, S.J.
1997 Are Americans becoming more or less alike? *American Psychologist*, 52 (11), 1226-1235.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

BOOK REVIEWS

The Long Nineteenth Century:
A History of Germany 1780-1918
David Blackbourn
Oxford University Press, 1998; one volume in-8O of xxv-578 pages;
ISBN 0-19-507672-9.

At the end of eighteenth century, Germany was a complex mosaic of more or less independent principalities and kingdoms, but on the eve of the 20th century, it had become one of the most powerful unified countries on the European continent, an industrial and dangerous military juggernaut! This book attempts to account for the transformation. Starting shortly before the French Revolution and leading us up to the conclusion of the first World War, it examines the main areas of German socio-cultural history (demography, education & religion, work and leisure, social structure, etc.), following political developments closely as well. It tries to assess the pervasive influence of the State, as the new rulers assert their authority, questioning stereotypes and concepts as "blind obedience." Railway, growing urbanization, inner migration, and the like produce new relations. The development of medicine, crime, popular culture, etc., also contributes. An alternative to traditional political histories, this volume offers information derived from the best sources on the socio-economic and cultural evolution of Germany in the 19th century.

Edgar C. Polomé

Du condor au lama: Chasse, pĕche et domestication au pays des Incas
Sergio Purini
Treignes [Belgium], Editions du CEDARC, 1996;
one volume in-8O. of 4 pages: ISBN2-87149-022-8.

This is actually a catalogue for a museum exhibition: the author starts with a brief overview of the landscapes and fauna of Peru.; then, he surveys the successive civilizations that prevailed in Peru and

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

describes growing regional diversification in the course of three millennia. A third chapter is devoted to human activities related with animals: hunting, fishing and domestication are described in some detail; the next chapter enhances the techniques prestigious in Peruvian archaeology: weaving and metallurgy. Finally the objects displayed in the exhibition are commented upon. A short bibliography ends this excellent introduction to the Peruvian world.

Edgar C. Polomé

Cités lacustres
Denis Ramseyer
Treignes [Belgium], Editions du CEDARC, 1992:
one volume in-8O. of 52 pages; ISBN 2-18749-011-2.

When the last prehistoric Ice Age receded from Central Europe, it left behind numerous lakes, along whose shores Mesolithic settlements flourished. For millennia, their remains stayed buried in the moist soil, until archaeology revealed wooden instruments, fabrics, food and the like, marvelously preserved in the favorable boggy milieu. This let us reconstruct many aspects of the settlers' way of life, giving a picture of culture in early Neolithic Europe 4,000 years ago. This short introduction is meant for visitors of an exhibition in which all the items come from Fribourg [Switzerland]. The book is brilliantly illustrated and comprises a short bibliography.

Edgar C. Polomé

Dolmens et Menhirs: Secrets des Megalithes
Anne-Elisabeth Riskine
Treignes [Belgium], Editions du CEDARC, 1995; one volume in-8O. of 64 pages; ISBN 2-87149-021-X.

A gorgeously illustrated short volume, giving a lexicon of the technical terms before coping really with the topic, Megalithism. The latter was born when the local megalithic population merged with arriving cattle-breeders to create new dynamic cultures and establish a network of exchanges. The dolmens and menhirs were erected to honor the dead, but great alignments of stones achieved a cultural and astronomical purpose. The transportation and erection of huge

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

heavy stones imply sizable sedentary communities, equipped with proper tools, the author focuses on Armorican megaliths and their patterns. The book closes with a short bibliography; as it stands, it is a clear introduction to megaliths and especially to those of Brittany.

Edgar C. Polomé

Thinking about Social Thinking
Antony Flew
Prometheus Books, Amherst, NY 1995

People tend to rationalize their behavior, and the temptation for social sciences to deceive themselves and their students is very real. Often, they do not realize that they are deceiving themselves. In consequence it is very difficult, if not impossible, for the social sciences to become as objective as the physical sciences.

Antony Flew examines this problem with the penetrating analysis of a philosopher. Many social science scholars offer and accept insufficient evidence and invalid arguments when it supports their emotional convictions. In the process he seeks to determine what can and what cannot be learned from the existing corpus of social science as it is taught in our universities – heavily flaw by illogical analysis and methodological shortcomings as it is. He discusses not only such authors as Thomas Malthus, Adam Smith, Karl Marx and Max Weber, but also classical philosophers such as Aristotle and David Hume, and issues an impassioned warning against complacent muddled thought and false but comfortable conclusions.

This is of particular importance in the present century, now that legal and moral decisions are being based upon the alleged "findings" of social science.

R. Peterson

Human Diversity and the Culture Wars
A Philosophical Perspective on Contemporary Cultural Conflict
Philip E. Devine
Praeger 1996

Raising the war on political correctness to a new and higher intellectual level, Philip Devine sheds fresh light on the whole question of cultural standards and the fashionable notion of multi-

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

culturalism. While acknowledging the diversity of ways of life and the differing belief systems that arise from and justify those ways of life, the author attacks the current exploitation of diversity to justify a militantly intolerant relativism. His wide-ranging and erudite work connects cultural issues to our real-world existence as biological and historical beings, pulling together ideas of bioethics, education, and the structure and purpose of families. This work will be of interest to those fighting the culture wars across the humanities and social and behavioral sciences.

Thus, on pages 44-45 he lists twelve propositions as characterising contemporary multiculturalist ideology. No 12 reads as follows:

The contents include chapters with such titles as: Taking Diversity Seriously Enough; The Cultural Spectrum; From Fundamentalism to Pluralism; From Neoconservatism to Deconstruction; Four Views of Human Diversity; Strong Multiculturalism; Weak Multiculturalism; Cultural Chaos; Humanism; Implications; The Epistemic Superiority of the Oppressed; Defining our National Identity; Creation and Evolution; The Politics of Personhood; The Case Against Secularism, by which the author means the disruption of integrated cultural systems which formerly gave a sense of meaning and coherence to human life. Modernity, Devine observes is less a directed development but rather "a vast and inconstant field of warring possibilities neither simultaneously reachable nor systematically connected... which provides for lives of the shallowest and most selfish sort."

Race and Human Evolution
Milford Wolpoff and Rachel Caspari
Simon and Schuster, New York, 1997

This book is largely concerned with the history of theories of the evolution of the human races. It recounts the debates on between single origin theorists who maintain that all living humans have evolved relatively recently from modern common ancestors, and multiregional theorists who maintain that pre-moderns migrated from Africa into Eurasia and subsequently evolved into the living races. The authors adhere to the second view, although they posit genetic

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

interchange between the evolving races rather than parallel evolutions in isolation. Although they are now in a minority among anthropologists on this issue, they have a serious case which deserves respect.

The principal weakness of the book lies in the authors' treatment of the evolution of racial differences in brain size and inteLligence. They pour scorn on Samuel Morton's conclusion that Caucasians and Mongoloids have larger average brain size than Negroids. They uncritically accept S.J.Gould's argument that Morton "finagled" his results, but they fall to note that even after Gould had corrected Morton's data the races still came out in the same hierarchy. They aptly warn that Gould's essays "invariably have a not-so-hidden agenda" (p.54) but they fail to hoed their warning that his writings are correspondingly suspect. They cite the massive data assembled by Beals, Smith and Dodd (1984) on race differences in brain size but fail to note that these confirmed Morton's conclusions and those of subsequent anthropologists who argued that the Caucasoids and Mongoloids evolved higher levels of brain size than the Negroids. They do not mention the extensive data collected by Rushton (*Race, Evolution and Behavior*, Transactions, 1995) which provides further confirmation for Morton's conclusions on race differences in brain size. Nor do they mention the extensive data on race differences in measured intelligence, which is consistent with the differences in brain size. The reader inevitably wonders what is the explanation for these omissions. Are Wolpoff and Caspari ignorant of this work? Or do they know of it but have opted to suppress it? The shoddiness of their scholarship on this crucial issue reduces to bland mediocrity what might otherwise have been a useful work.

Richard Lynn

Genetics, Society and Clinical Practice
Peter S. Harper and Angus J. Clarke
BIOS Scientific Publishers, Oxford, U.K. 1987

This book provides a concise introduction to the increasing role of genetic testing in modern societies. The authors examine the "ethical" and social issues arising from genetic testing, but in general maintain a rather popular and antiquated approach to the ethical

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

aspects, although it is true that in this they are only reflecting the contemporary pressures of the mass media.

However, in a more positive manner they do approach the problem of adapting to the changes that will be necessary in our current pattern of social and economic organization as a result of the new potential for genetic analysis and manipulation. Particularly they discuss the question of medical insurance. The old days when it could be assumed that every individual had essentially cross-the-board chances of developing illnesses and disease during the course of his or her lifetime are gone. Clearly, insurance, if it is to survive as insurance, must be based upon the genetic potential for future claims arising from genetically-driven factors. Unfortunately prevailing antiquated opinions regard this as "unethical", and as a result it would seem that insurance companies are going to be placed under legal constraints to ensure that the genetically healthy pay for the costs of maintaining the genetically disadvantaged. But will that work in practice? Only a redistributive law which forced healthy individuals to transfer funds to assist the unhealthy would ensure that such a system of insurance could survive.

All the other arguments are well-known – such as the "who shall play "God" echo from the Middle Ages advanced by those who wish to ban science, just as the clothworkers sought to destroy industrial spinning and weaving machines in the eighteenth century.

Many genetic counsellors, too, are still on the wrong track, advising those with defective genes to marry persons with healthy genes, and so infect the healthy stock with their own faulty heredity. Considering all in all, one can only look forward to the day when germ line intervention has been successfully developed, to make it possible by genetic surgery to free people from their defective genes, so that they can bear healthy offspring. But even that kind of research is under attack from a broad range of anti-science influential "ethical" philosophers who are still living in the dark ages.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

CROSS CULTURAL COMMUNICATION

By Nicholas Dima Ph.D.

Although instant international communication and rapid travel is now common, a substantial variety of diverse customs and concepts still survive, and with these treasures unfortunately come cultural barriers to sympathetic understanding. Effective *cross cultural communication* is a necessity in the contemporary world if humankind is to avoid unnecessary conflict and preserve peaceful relations between nations while retaining international diversity.

"This is absorbing and essential reading for those who MUST COMMUNICATE across cultural and geographic frontiers. It is rich in anecdotes and insight."

RICHARD W. CARLSON
Director, Voice of America

"The dynamics of global change make new demands on those who serve the United States armed forces abroad. This book by Nicholas Dima will be of great value to military personnel preparing for an international assignment."

RICHARD V. ALLEN
Former National Advisor to President Reagan

ISBN 0-941694-36-4
Price: $15.00
128 pages, Paperback 7" x 10"

Institute for the Study of Man
1133 13th St., N.W., Suite C-2, Washington, D.C. 20005-4298
Tel: (202) 371-2700 Fax: (202) 371-1523

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

The Geography of American Achievement

Nathaniel Weyl

CONTENTS INCLUDE

The American Establishment
The Flight from Science by Americans
Ethnic Background of American Writers and Artists
Ethnic Background of American Lawyers and Doctors
Ethnic Leadership in American Business & Industry
Ethnic Background of the Richest Men in America
The Enigma of Jewish Eminence and Influence
Japanese Achievement in America
Ethnic Name Charts and Statistical Data

The author asks which national stocks have been most successfull in America. This is answered by a statistical analysis of numerous biographical records ranging from *Who's Who in America, The Social Register, American Men and Women of Science, The Directory of Medical Specialists, Leaders in Education*, and *Frontiers of Science and Technology*.

Author Nathaniel Weyl identifies a range of names which experts agree are broadly indicative of Japanese, Chinese, Hispanic, English, Jewish, Polish and other national origins. He then records the frequency with which these appear in social security records to assess their overall frequency in the American population as a whole, and compares the results with the frequency with which each name appears in biographical records associated with achievement in business, science, medicine and law, etc. Inter-breeding between diverse ethnic groups is taken into consideration.

ISBN 1-878465-00-7 Clothbound, 192 Pages, Price $20 (post $2.00)
VISA/MASTERCARD ACCEPTED TEL:(202) 371-2700 FAX:(202 371-1523
Scott-Townsend Publishers
P.O. Box 34070
N.W. Washington, D.C. 20043

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED